

# COAL AGE

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C. E. LESHER, Editor

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## *Tiding Over a Crisis*

**B**ITUMINOUS-COAL operators meeting in Washington this week were able after twenty-four hours of spirited debate to unite on only a partial acceptance of the President's proposal looking to the adjustment of the strike. On but one broad phase of the plan submitted to them, that of willingness to arbitrate and to participate in an investigation of the bituminous-coal industry, were they able to make unanimous report to the President. Three important areas, embracing all of the unionized fields of Pennsylvania, save a few individuals, and the State of Indiana told the President they could not agree with his proposal. Some thirteen other districts, from the Rocky Mountain region east to Ohio made unqualified acceptance, as already had the anthracite interests. Those taking such affirmative position represent a majority of the districts involved and a majority of the tonnage.

The split in the ranks of the bituminous-coal operators is serious and extremely unfortunate. The President had placed the operators in a serious predicament, not only in his original proposal but by the terms of his subsequent interpretations of that statement. To all intents he asked them to return in every respect to a position of *status quo* as of March 31. They were asked to pay the peak wage scale, grant the check-off and, it is unofficially reported, reinstate the four-state agreement until such time as a commission could investigate and make recommendations and awards. In other words it was asked in the interest of national welfare that practically every point and principle for which the operators had held forth against the miners' union be subverted. On this general statement there is and was no apparent disagreement.

Where the councils of the operators divided was on a matter of policy—whether to go along with the President regardless of personal opinion as to the propriety or adequacy of his plan or to refuse. So deep is the feeling engendered by the division that all hope of unity on labor matters in the bituminous-coal industry is for the time being lost. The mine owners have proven no match for the mine workers.

The time for recrimination is past. The incomplete acceptance by the operators of the President's plan and its tentative rejection by the United Mine Workers as it were wipes the slate clean. As the President says, the point has been reached where the "good offices of the government in seeking a voluntary adjustment of the dispute between the operators and mine workers are without avail." It is now in order to put forth some other plan of action to get new coal production.

It is quite clear now that the uncompromising attitude of the Pittsburgh operators as set forth in their letter to the President and the equally unbending attitude of John L. Lewis absolutely precluded and still precludes all hope of getting both sides together unanimously. Pittsburgh and those like minded among the operators

intend to carry to a conclusion at once the issues joined in the strike of 1922.

There are left the anthracite region and a substantial portion of the soft-coal areas where the President has a prospect for resumption of production on a normal basis. It is in these areas also where the issues must again be brought to focus and settled in 1923.

## *The Import of the Union's Position*

**T**HE United Mine Workers on July 15 declined in principle the proposal of President Harding looking to the termination of the coal strike. Hidden in much language, evidently written for home consumption, one finds that two reasons are definitely assigned for this refusal. One is that the union is opposed to arbitration of wages in any form whatsoever and the other is that, every other consideration aside, the fact that not all union and non-union areas on strike are to be included in the arbitration is a bar to their participation.

The position of the union on the second point is decidedly weak. "The only effective way," they say, to settle the strike and to get the men back in the mines is "by meeting with our representatives in interstate conference." In other words they profess to be ready to follow the deep-rutted path of a Central Competitive Field conference and settlement, which must carry with it, as in the past, subsequent working agreements in the outlying fields based on the results of the larger conference. Yet they refuse to consider a proposal for arbitration that is not national in scope. "The mine workers cannot," they say, "lightly consider the utter abandonment of more than 200,000 of their members to the whims and caprices of hostile employing interests who are publicly committed to the policy of destruction of collective bargaining in the industry."

The real import of the miners' contention here is a thinly veiled challenge to the President to force certain fields into negotiations with them—fields that otherwise are now or are seeking to be free from their yoke. In the bituminous areas there are three separate and distinct strike situations. One, and the most important from a tonnage standpoint, includes the old-established organized areas, as Ohio and Illinois. A second is represented by Kanawha, which is in the process of throwing out the union, and the third embraces districts, as the Connellsville in Pennsylvania, that were non-union before April of this year but where the union has recruited large numbers of the men and greatly curtailed production.

The union leaders are quite well aware that once they resume work on any basis in the older and more important fields their fight for recognition in New River, Kanawha and Fairmont in West Virginia and in the non-union areas of central Pennsylvania will cease to be a matter of national concern and will become instead a local irritation holding for them slim, if any, chance of victory.

### *What Is Americanism?*

WE are aware that what we term Americanism neither is nor can be restricted to America we may be assured that what we have regarded as a most cherished possession in America is the right of the American to work when he will and for whom he will without fear of intimidation, to render service to none but to the American Government and to those to whom he is under contract under the terms of that contract, to run his factory, his shop, his mill or his mine subject only to the laws of the country to which he owes allegiance, to be protected by the laws in performing such acts as the government does not proscribe, and not to be browbeaten, insulted, assaulted or robbed by any person or by any body of persons.

Since the strike of April 1 the operators of mines in union districts and the workmen they would employ have been prevented under threats of violence from performing such acts as the law approves, and this restriction has been imposed by an irresponsible body of men known as the United Mine Workers of America.

It is true no great number of acts of violence have been committed. The Herrin massacre and destruction of property is an outstanding example. There have been others which the newspapers quite generally omitted to mention, feeling that disorder was so inevitable around the mines that the violent acts committed were not worthy of notice. Dynamiting, fires, murders, violence and threats have been frequent. That they have not been more numerous is due to the fact that operators and their workers have assented by inaction to this domination—one entirely adverse to the Constitution and not contemplated by the founders of the Republic.

Meantime what has the Government of the United States, and especially of the individual states, done? A few governors like Allen, of Kansas, and Morrow, of Kentucky, have done well. The others have done nothing, and they have asked nothing of President Harding. Wherever there has been intimidation and consequent idleness this should be said to their everlasting condemnation.

In Pennsylvania the work of keeping order has fallen to the state police. The governor knows that this force is inadequate. This has been abundantly proved. Under the intimidation which that official organization has been unable to restrain, men have been afraid to work, operators have been ill-disposed to open their mines. Here and throughout the union mining regions a greater power than the state governments and the United States has arisen—the United Mine Workers of America.

President Harding has been hampered by states' rights. He is restrained by the Constitution. Thus he might be excused for taking no action. But is he disposed to remain silent and to recognize constitutional restrictions? Not at all; if indications are to be believed he prefers rather to take action still less lawful than that from which he has refrained. He is said to propose the conscription of labor and to be preparing to seize and use private property—two things utterly alien to the spirit of the Constitution.

For him to maintain order may be unconstitutional in the absence of invitation by the governors, though many authorities on constitutional law do not believe so. They hold that the lack of order by preventing the free use of labor and the free operation of the mines has jeopardized the social life of the country, has

raised up a power which usurps the authority of our nation and its parliament, which upsets democracy and which gives to a minority a control over the Republic. The nation therefore is in danger, they contend, and action by the President is justifiable.

President Harding's alleged preference for the seizure of properties may be popular with certain noisy voters, but if consummated such a sequestration would be an utter abridgment of individual rights. It is socialism rather than democracy or Americanism, but no one will condemn the President if he tries to restart the mines by enforcing order.

Conscription to work if adopted will be much more difficult to enforce than prevention of interference with those who would work. If conscription is merely a device to give the worker a chance to deny he is a "scab," if it is merely a permissive conscription, then it is weakening to the Republic, for he who would break faith with one kind of conscription is emboldened to defy another. Having done it in peace, it will look less heinous in war.

We are short some three or four millions of tons of bituminous coal per week. Perhaps we should have five million more than we are now getting to feel perfectly safe. A small proportion of the men now idle could supply that quantity. With assurance of safety many workers—probably more than are required—would return to the mines. Even in the anthracite region many would take up their duties if duly protected; not enough at first, it is true, to furnish the coal we need but probably enough to bring the strike—a combination in restraint of trade and openly designed as a means to increase wages above that for which men are offering to work—to an end. Even if it failed of that end, the keeping of order is an action well worthy of the Executive. The first duty of this or any other government is to maintain the peace and to defend the constitutional rights of its citizens.

President Harding has failed to exercise the boldness that is expected from one in so responsible a position—except in regard to capital. When the railroads were failing to earn the interest provided by law, when the Interstate Commerce Commission showed a disposition to maintain the freight schedule in order to produce at least part of the interest which Congress has permitted, he boldly enough called for a reduction in freight rates, declaring they were too high and an impediment to commerce. He was not afraid to announce without any prior elaborate inquiry that freight rates must be reduced.

But after almost all wages had come down, after the Railroad Labor Board had reduced the wages of most of its workmen, after costs of living had been lowered, President Harding declared that he did not know whether the wages of mine workers should stay up or come down. Surely he knew that they had been fixed by a prior government commission with full knowledge and consideration of the cost of living. Undoubtedly he knew that the day workers had struck against the award and had obtained a further increase. Unquestionably he knew that the living cost was lower than when the government commission made its award and that the contract period having ended another contract recognizing the change in the cost of living was imperative. But, nevertheless, when the time came to discuss matters with the mine workers and operators he tried to make it appear that he knew none of these things.



# Plan for Shaft Mine Giving Large Capacity and Saving In Stoppings, Overcasts, Doors and Air Costs\*

Intakes and Returns Are Driven as Such to a Predetermined Point and Then Both Are Made to Carry Air in the Same Direction, So That Temporary Stoppings May Be Broken Down

BY O. J. PLESCHNER†  
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**S**AID to have originated in the coal field around Westville, Ill., the plan accompanying this article has been used for the laying out and planning of new mines in that field for many years. The general layout has a double-track storage road for loads and two single-track storage roads for empties, one being placed on each side of the main bottom. The loads pass to the bottom from each main haulage road by curves of large radius. The empty cars are pushed off the cage by the loads and from this point until they come to rest in their appropriate storage track they are moved by gravity.

Rolling from the cage to the car lift at A they are automatically raised to such a level that they will run

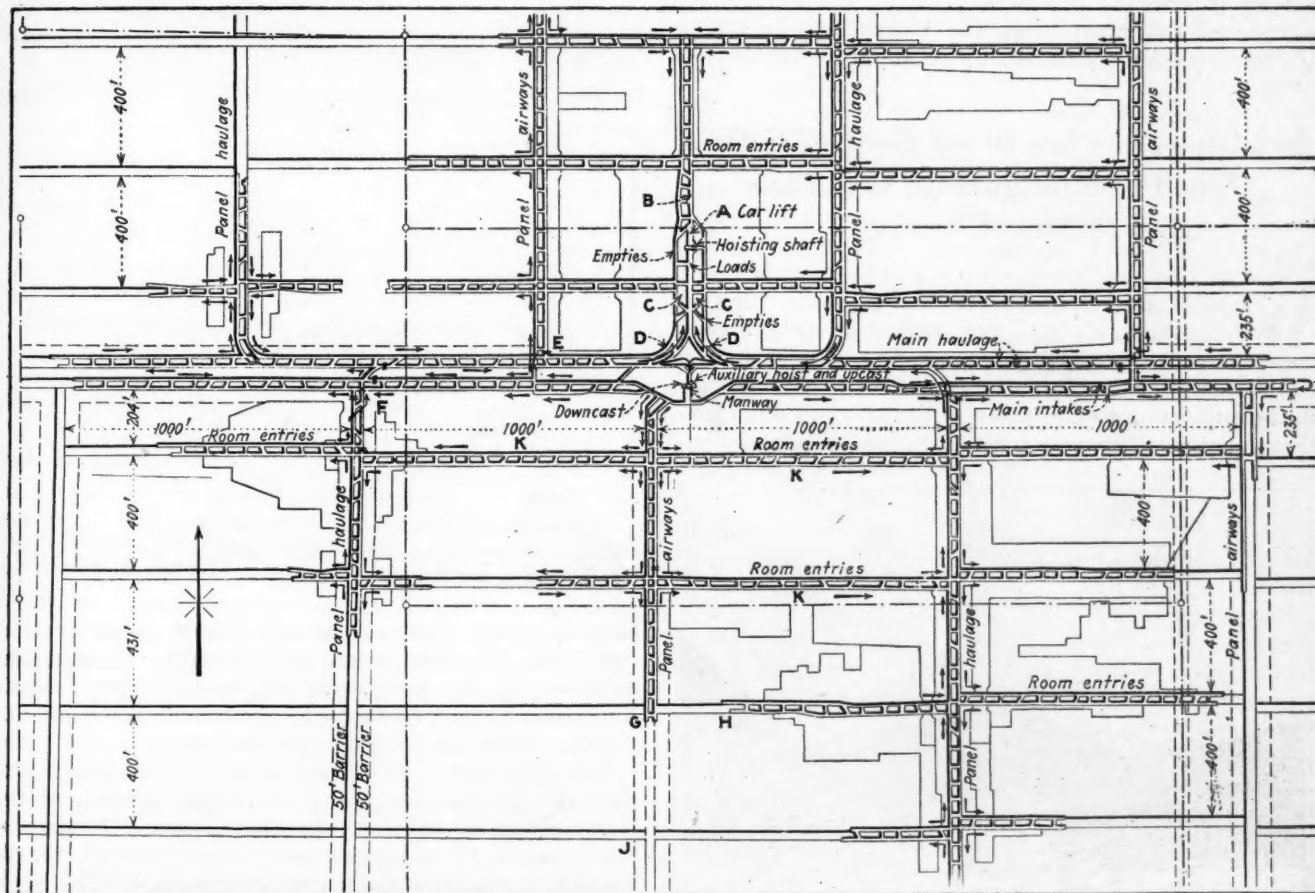
\*Article entitled "Description of Shaft Layout and Four-Entry System for Large Tonnage Production," read at meeting of Illinois Mining Institute on board "Golden Eagle" during a trip on the Mississippi, June 9, 1922.

†Mining Engineer, United States Fuel Co.

through a spring switch into a kickback at B. The main purpose of this kickback is to give the cars the requisite speed. It handles the cars much better at this point than an "upgrade" would. This kickback can be raised sufficiently to allow a car needing repairs or oil to pass through into the car-repair shop beyond.

The empties are coupled together on the storage track, and the locomotives bringing in the loads pass from the loaded to the empty tracks either through cutoff C or D, the loads continuing toward the shaft by gravity over variable grades from one to three per cent, the latter being the grade provided at the cages.

The four main entries are driven in two pairs, a pillar 50 ft. thick being provided between the two inside entries. This plan affords several advantages both in haulage and ventilation; the first of these latter is the saving of all stoppings between main intakes and returns, except at points where panel entries are broken



STANDARD MINE LAYOUT WITH FOUR-ENTRY SYSTEM, IN USE AT WESTVILLE MINES OF UNITED STATES FUEL CO.

One striking feature is the almost unbroken pillar between the intake and the return airways. This prevents the loss of air at stoppings. Another feature is the

change from temporary ventilation to permanent. With temporary ventilation one entry is the return airway for the other. When the ventilation is made permanent,

instead of the stoppings being tightened and made durable they are removed and the current goes in the same direction in both entries.

off, and there only two overcasts and one stopping on the haulage side or two stoppings and one overcast on the aircourse side, as at *E* and *F*, are required.

The addition of the second entry doubles the area of the intake and making the two returns the main haulage roads gives double tracks for empties and loads. The double-track main haulage is becoming more and more necessary as larger outputs are obtained and greater territories worked out from one hoisting shaft.

The panel haulageways are turned off each side of the mains at intervals of approximately 2,000 ft., with panel airways at intermediate points, making the blocks of room entries 1,000 ft. long each side of the panel haulageways. This distance of 1,000 ft. has been found to be most satisfactory for this field and may be varied to suit other mining conditions. The advantage of the system described in the ventilation of the mines is that it makes all the haulage roads return airways, few, if any, doors being required except near the faces where development progresses in advance of the permanent ventilation, and it must be remembered that everywhere the permanent ventilation carries the fresh air to points not far from the faces.

On none of the intake airways is haulage permanently maintained, and panel airways are driven ahead from the last room entry, which has broken through as at *G*, viz.: When the face of the entry *H* is driven to the airway at *G*, the airway is driven forward to *J* through this entry, then stopped and track taken out until the next room entries are driven through. At this time the ventilation in these room entries is reversed and passes out as it does through entries *K*, this then being the permanent ventilation for these entries. This usually occurs at about the time

the temporary stoppings on this and the haulage entries up to this point are beginning to settle and leak.

The absence of practically all crosscuts and stoppings between the main intakes and main haulageways, or returns, fills a long-felt want and should save much of the labor and materials expended in the building and maintenance of permanent stoppings. Furthermore it should provide for a more satisfactory distribution of the air at the face of the workings. Experience has shown that these benefits greatly offset the additional expense of driving the fourth entry.

This system has a further distinct advantage in the ventilation of the mine if the crosscuts between the two entries forming intakes and returns are opened up after the permanent ventilation has been arranged. In case of a heavy roof fall in the intakes the crosscuts and intake airways will provide a detour around the fall until the rock can be cleared up. The system also prevents the air in the return from being baffled by the passage back and forth of the trips of cars. It may readily be seen how the air can circulate around a trip if the crosscuts are open.

This baffling of the air is extremely noticeable also at the hoisting shaft, which is used as an upcast in the ventilating system. In the accompanying plan provision is made to correct this baffling by having an auxiliary upcast adjacent to the downcast and separated by a concrete wall. This upcast is used also as an auxiliary hoisting shaft for the raising and lowering of men, materials, etc.

In mines giving off gas, which would make it dangerous for electric haulage to be on the return, the system can be reversed, using an exhaust instead of a force fan.

## In Idaho Tests Are Being Made of Certain Small Semibituminous Coal Beds

BY HENRY M. PAYNE\*  
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WHERE the freight rates on coal are high all indications of coal are regarded as of great importance. Consequently much interest has been exhibited in some thin beds, or bands, of coal recently found in Idaho, despite their irregularity of thickness, their contorted character, the presence of faults and



FIG. 1. COULEE, OR DRY VALLEY, NEAR COBB, IDAHO, IN WHICH COAL HAS BEEN FOUND

On the right or northeast side, high on the hill, is a small basalt cliff, an igneous intrusion through the measures. On the left is a low hill of badly contorted sedimentary rock in which coal is found.

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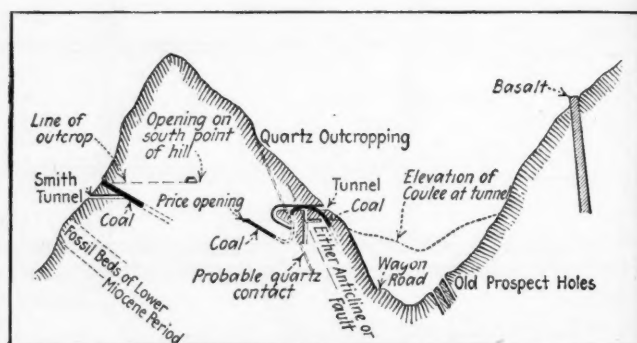


FIG. 2. DIAGRAMMATIC CROSS-SECTION OF COULEE AND HILLS

Note the basalt dyke on the right which forms the small cliffs in Fig. 1, the quartz dyke on the left and the line of a sharp anticline or possibly a fault which causes the coal to be either bent over or sheared, lying between the right face of the left hill and the quartz intrusion.

igneous rock. The coal, though found above rock of the lower Miocene period and therefore in measures quite recent, has been converted by heat into a semibituminous coal containing about 26 per cent of volatile matter in the pure coal substance.

The high cost of fuel in southern Idaho has led to extensive prospecting along the Snake River and the organization of at least one coal company to develop the islands of sedimentation which occur in the basaltic formations along the north bank of that river near Cobb, on the Union Pacific Ry. Cobb is in Washington County near the line of the State of Oregon.

A general idea of the topography may be obtained from Fig. 1, which is a view looking up the coulee. A



basalt cliff is seen high on the hill to the right, and across the coulee from the wagon road are a number of old prospect holes. In none of these, however, is there any evidence of more than carboniferous shale badly interstratified with fireclay, dipping from 30 to 45 deg. northeast toward the basalt cliff. In the roof rock of one opening a partly carbonized stump is seen.

About a half mile farther up, a tunnel was driven in the left or west side of the coulee for about 750 ft., bearing around to the right and dropping on an incline, like a letter "J." The reason for this will be seen in the cross-section, Fig. 2. The "coal" bed when encountered, was rising rapidly, with the roof rock varying from draw slate to rotten sandstone. This formation suddenly appears as a violent anticline, but from surface examination probably is a fault extending along a general north-south line.

A crosscut was made at this point. The coal in this cut is shown in Fig. 3. It consists of irregular layers of coal, slate, shale, fireclay and other extraneous matter, the broadest coal bands being about 6 in. thick,

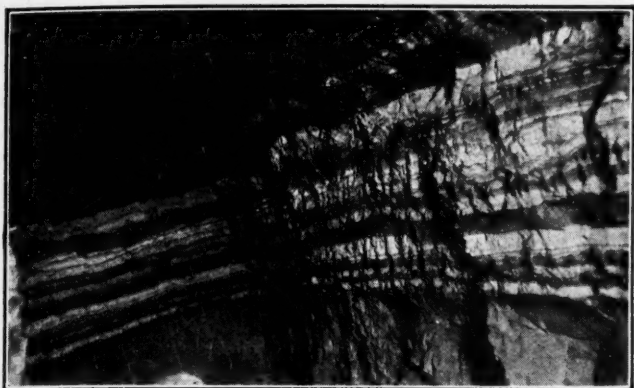


FIG. 3. IN THE CROSSCUT COAL, SLATE, SHALE AND FIRECLAY OCCUR IN NEARLY HORIZONTAL BANDS

Here the broadest bands of coal are only 6 in. thick, but they are irregular and never wholly clean. The horizontality of these beds is not maintained. They are nearly vertical where first met and afterward turn down till they double over like a fish hook.

but irregular and never wholly clean. About 400 ft. from the mouth of the tunnel a winze has been sunk to a depth of about 120 ft., at the bottom of which was found a rhyolitic sandstone with white quartz contacts. The general dip of the strata and a quartz outcropping on the hill above the tunnel would indicate the intrusion of the quartz at this point.

About 30 ft. below the level of the tunnel a crosscut was turned off the winze for a distance of 60 ft. to the north. Here the lesser laminations appear to have combined, but only one of them is worthy of note, being 8 to 12 in. thick and wavy, dipping to the northeast.

Frequent masses of fireclay intervene, the roof rock is badly broken, and all development at this point has been stopped. The workings are ventilated, as seen in Fig. 4, by a furnace fed from a pipe extending into the tunnel and down the winze a distance of approximately 450 ft., thus drawing out the air by ascensional ventilation and leaving the whole entry as an intake.

At the left of the wagon road in Fig. 1 may be seen an outcrop opening which is reproduced in Fig. 5. At this point slightly below the level of the tunnel mouth the coal bloom appears about 3 ft. thick, but was not driven to roof rock at the time of the examination. This seam dips to the northeast and probably is the same one encountered in the tunnel, extending to the fault indicated in Fig. 2.

On the south point of the hill, overlooking Snake

River, is an old prospect hole showing 7 ft. of badly broken coal interstratified with fireclay and volcanic ash and dipping, like all the other exposures, to the northeast. From this point on around the hill to the west, a clearly defined bench is found, and on the west side, directly opposite the tunnel, is an abandoned prospect hole extending horizontally for about 100 ft. to an intersection with a coal seam said to have shown 18 in. of coal and dipping 45 deg. northeast. This incline is now filled with water, but the formation evidently is the same as that

shown on the south hill. Below this formation occurs a stratum rich in fossils of the lower Miocene period.

Analyses of the coal taken in the tunnel crosscuts and various other exposures show volatile matter from about 11 to 20 per cent; moisture from 1.3 to 1.5 per cent; fixed carbon, 52 to 57.8 per cent, and ash, 22.8 to 33.6 per cent. The entire hill appears to contain irregular pockets or lenses corresponding to islands of sedimentation, upon which the effect of igneous contact is shown in the low moisture and volatile content of the coal. Interspersed among these are beds of ashy shales, coarse clays, coarse sandstones and lava.

The owners of the property, in their desire to ex-



FIG. 5. COAL AT CROP

Here the coal is about 3 ft. thick, but, as the opening was not driven in to the point where roof rock forms, judgment as to its value must be suspended.

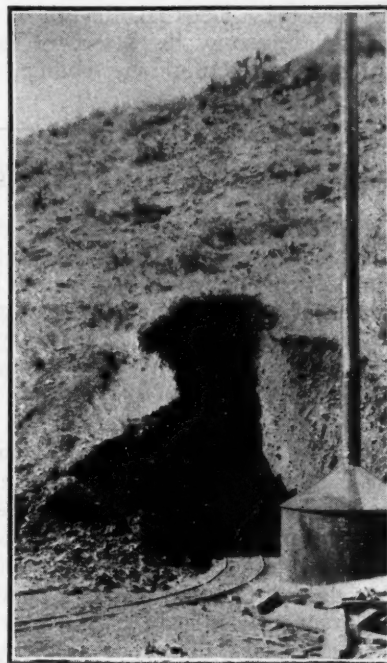


FIG. 4. OPENING WITH VENTILATING FURNACE

The opening is an intake. A pipe from the furnace goes into the mine, along the drift and down a blind shaft. A fire in the sheet-iron furnace causes the air current.

haust all the possibilities of obtaining coal for domestic purposes, are considering core drilling. Tests also are being made of the various clays on the property for industrial uses. Inasmuch as all tertiary coals of importance have been formed in the presence of extensive sedimentation, and free from igneous metamorphic action, such deposits as exist under the conditions enumerated must necessarily be subject to irregularity in occurrence and paucity of vol-

atile matter. The coal, though of comparatively recent deposition, cannot be classed as sub-bituminous, but is rather a semibituminous, owing to the ripening effect of heat and pressure.

### Pneumatic Tools Replace Pick and Shovel

**I**N MANY jobs involving the removal of earth the material encountered is too soft to render drilling and blasting necessary yet is too hard to permit penetration of spade or shovel. Such ground heretofore has required picking. This, as everyone knows who has ever attempted it, is hard, laborious and fatiguing work.

Mechanical picking methods now appear about to supplement manual operations, as an air-operated digger, with which one man can loosen as much soil as five men with picks, has been perfected and placed on the market. The rate at which soil can be dug with this equipment will in most instances exceed this. With this tool a man maintains a more uniform rate of work than does one equipped with a hand pick and stops much less frequently to rest, as his work is far less fatiguing.

Furthermore, danger of accident resulting from careless handling or swinging of the pick is entirely eliminated. Men are thus enabled to work closer together in trench, tunnel or shaft. This new device and its manipulation are shown in Fig. 1. The machine itself weighs only 23 lb., and a man will handle it standing upright. Essentially this device consists of an air hammer with a heavy spade at one end and a cross handle containing the throttle at the other. The over-all length is 34 in. The spade or digging blade is held in the end of the hammer mechanism by a suitable retaining device. Blows delivered in rapid succession to the upper end of the spade drive it rapidly into the earth, which may then be readily pried loose.

For work in clay the blades measure approximately 6 x 8 in. and are slightly concaved. For use in dirt they are made 5 x 9 in. and rectangular in cross-section. The face is thus flat, the thickness being  $\frac{5}{8}$  in. at the

top and  $\frac{5}{8}$  in. at the point, the cutting edge being beveled from the back. Conveniently located in the handle the throttle lever may be readily pressed or released as the tool is pushed down or lifted. A buffer is provided to take the blow of the hammer if air is not shut off while the tool is being raised. An operator, however, soon learns to shut off the air automatically as he begins pulling up on the handle. This tool, known as the No. 56-H Little David clay digger, is manufactured by

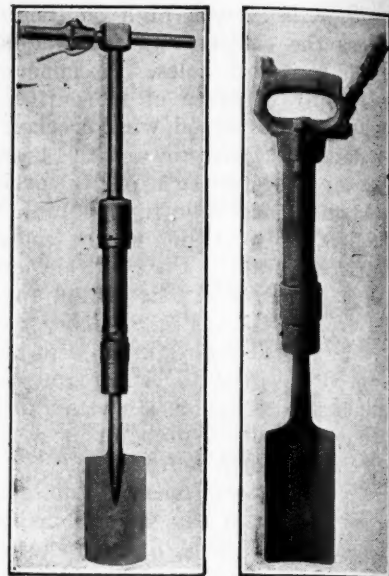
the Ingersoll-Rand Co., 11 Broadway, New York. As the name implies, it is a development of the tools already extensively used for tunneling through clay. These tools have in some instances reduced the cost of such operations in clay as much as 40 per cent. It is only natural that they should now be applied to the closely allied operations of trenching and shaft sinking.

A somewhat similar spader, known as DE-361 compressed-air spader or pneumatic clay-digging tool, but somewhat lighter, weighing only 16 lb. and 17 in. long, is being manufactured by the Sullivan Machinery Co. It requires a  $\frac{1}{2}$ -in. air hose. This is recommended for the excavation of stiff clay in trenches, open cuts, caissons and tunnels where the ground is not sufficiently hard to be drilled and shot and yet is too hard to be handled readily by pick and shovel. It, like the tool just described, takes the place of the hand pick as well as of the hand spade or shovel.

In tunneling in blue glacial clay, very dry and hard, in the Chicago district these spades increased the output per man from 3 to 4 cu.yd. per eight-hour shift to from 8 to 10 cu.yd., the work being limited by the ability to get rid of the muck instead of by the rate of digging, as formerly. Any air pressure from 45 to 100 lb. can be used. The spades are made 4, 5 and 6 in. in width.

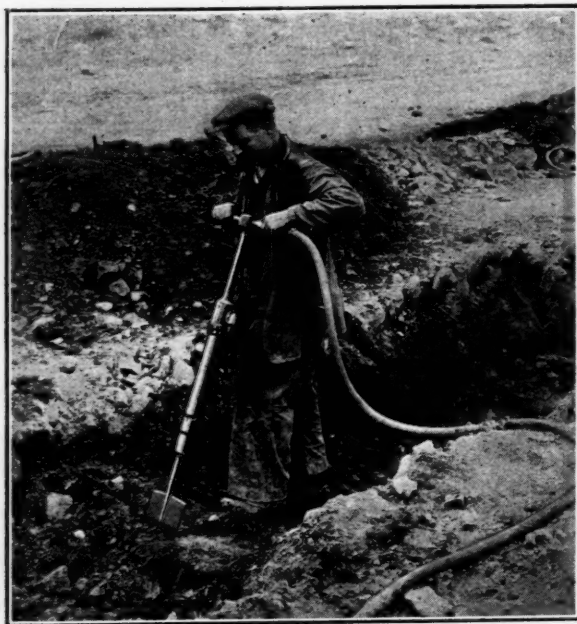
In this connection may be mentioned the Boyer clay digger, a modification of the clipping hammer of the same name, manufactured by the Chicago Pneumatic Tool Co. This spader makes 1,100 blows per minute and uses 20 cu.ft. of free air per minute at 80 lb. and 25 cu.ft. at 100 lb. pressure. The blade of the digger is 5 x 9 in. and with the shank is 14 in. long. Its weight complete is 16 lb., half that weight being accounted for by the blade. The over-all height is 34 in.

None of these spaders is electrical. They would have a broader field around the coal mine if they were. It is not at all impossible that such machines as these would be invaluable in lifting clay bottom or bottom coal left by undercutting machines as well as in surface excavation of all kinds, of which the mines have much to perform in the course of a year.



TWO COMPRESSED-AIR DIGGING TOOLS

The first is the Little David and weighs 23 lb. Its over-all length is 34 in. The blades are 6 x 8 in. and 5 x 9 in. The other is the Sullivan, which weighs 16 lb., is 17 in. long and its blades are 4, 5 and 6 in. wide.



DIGGING CLAY WITH A COMPRESSED-AIR PICK

This mechanism, which looks like a shovel, really is a loosening agent like a pick, but the blade of the pick is wide to match the great power of the compressed air, which will loosen a greater width and depth of clay than an ordinary pick could possibly do.



# Laying Out Mine for Coal-Loading Shovel Operations

By Using Sixty-Degree Turns in Place of Right Angles  
Twenty-Foot Radius Curves Can Be Installed Though Curves  
of Twelve-Foot Radius Can Be Negotiated by the Shovel

By WILLIAM WHALEY  
Knoxville, Tenn.

**S**HOVELING machines can be used with the usual system of mining coal, but to get the best results the work should be developed and transportation arranged so as to keep the machine employed to the fullest possible extent. This means concentrating the transportation so that in every working place the empty cars will be supplied to the machine and loads removed therefrom with promptitude. A system or methodical plan of working is therefore desirable. Fewer rooms are required for given tonnage, and they, therefore, can be better equipped at the same or less cost. Track should be standardized; curves, rails, turnouts, etc., should be supplied to the underground force ready to lay.

The following suggestions are advanced as a practicable method of standardizing the work: The radius for curves should be not less than 20 ft. The shoveling machine will negotiate curves as short as 12 ft., but a

are turned at 60 deg. and the track is connected through in such a way as to form a run-around for cars, the empty cars coming in through one crosscut and going out through the other. When the machine is loading in the haulageway the empties would be stored in the first crosscut as shown and shifted one at a time back of the machine for loading, and then dropped past the

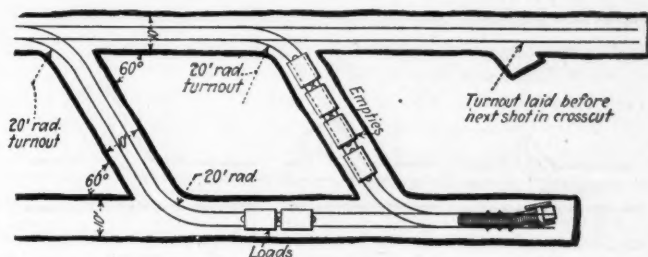


PLATE II. TRACK LAYOUT FOR ENTRY DRIVING  
Tracks are laid in two last crosscuts and one acts as run-around to the other. With this plan shifting of cars is unusually rapid.

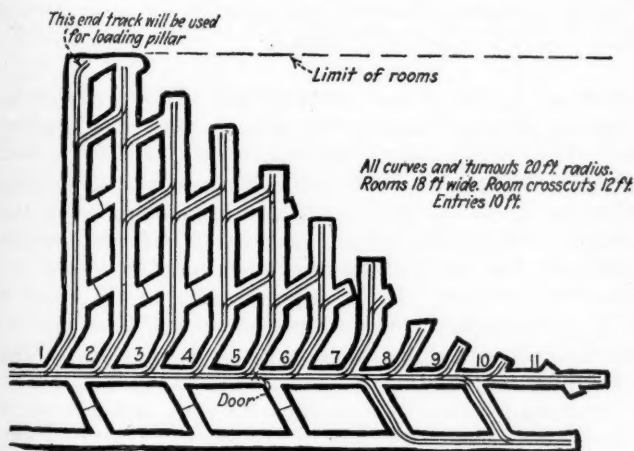


PLATE I. ADVANCING SECTION OF MINE.  
PREFERRED PLAN

The rooms are not opened at right angles to the roadway but 30 deg. therefrom. This makes it easier to negotiate the turns, though it is not absolutely necessary to put in a crooked neck of the kind shown, for machines can, if needful, make the right-angled turn. Crosscuts in rooms and entries have a similar slant.

20-ft. radius is an easy curve for the machine and for the locomotive and cars and makes derailment less likely. Moreover, the shovel can load on such a curve with satisfaction.

The room necks and crosscuts should be turned off the entries at an angle of 60 deg. Room crosscuts should be turned at a similar angle, thus making it possible to lay easier curves and enabling the machine to reach all the coal that is to be loaded at any time in the room necks as well as in the rooms, crosscuts and entries, practically eliminating all hand loading.

Plate I shows a general layout of an advancing section of a mine using single-track rooms and shows standard turnouts of 20-ft. radius. Plate II illustrates the method of driving a pair of entries. The crosscuts

switch point for storing until a trip has been made up. This sketch is self-explanatory.

Plate III shows the arrangement of single-track rooms with track through crosscut, all curves being of 20-ft. radius and the angles of the tracks being 30 or 60 deg. Plate IV shows method of loading coal when robbing and Plate V illustrates how the shoveling machine is enabled to reach all of the coal at every shot from the first shot off of the entry, as shown in Fig. 1 of this plate, until the machine is entirely straightened out in the room neck, as shown in Fig. 3. Fig. 4 illustrates the machine passing around the curves of the crosscut and Fig. 5 illustrates the practicability of operating the machine through a 90-deg. crosscut with 12-ft. radius curves. While such sharp turns in the track are

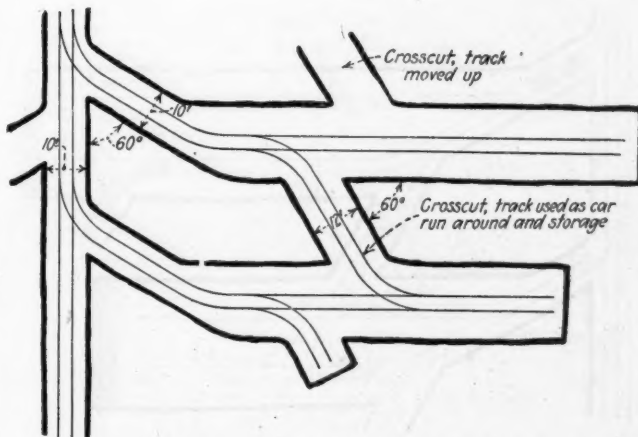


PLATE III. SUGGESTED LAYOUT FOR NARROW ROOMS  
Rooms are connected in pairs by track through crosscut, facilitating storage and shifting of cars. Turnouts and curves should be standardized to facilitate quick laying of good track.

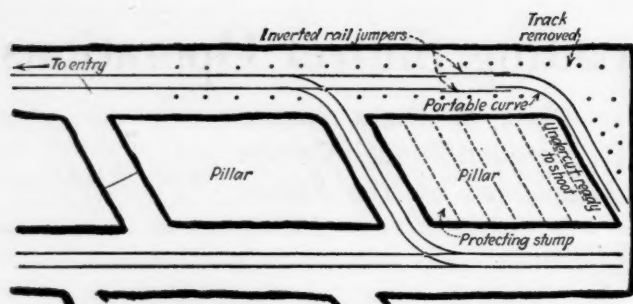


PLATE IV. METHOD OF LOADING PILLAR COAL

Track across end of pillar is moved up after each shot. Connection to room track is by means of inverted rails in maintenance-of-way chairs.

not recommended the illustration shows that the machine can be used and moved around in an old mine with crosscuts and tracks laid in this manner.

Plate VI illustrates proposed arrangement for double-track rooms, the system of operation being similar to that previously described. Plate VII illustrates the

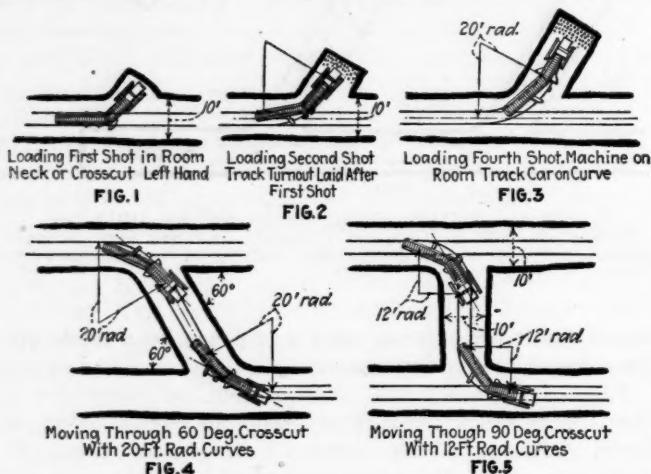


PLATE V. MACHINE NEGOTIATING CURVES

In Figs. 1-3 the machine is loading in a 60-deg. turn, showing three successive points in its progress. In Figs. 4 and 5 it is shown traveling in and out of two crosscuts, two curves being on a 60-deg. turn with 20-ft. radius and two on a 90-deg. turn with 12-ft. radius.

flexibility of the shoveling machine, showing how the rear conveyor and shovel can be shifted into different positions, enabling the machine to reach into curves, across the face of a room, to discharge upon a parallel track and to pass around short curves in the mine.

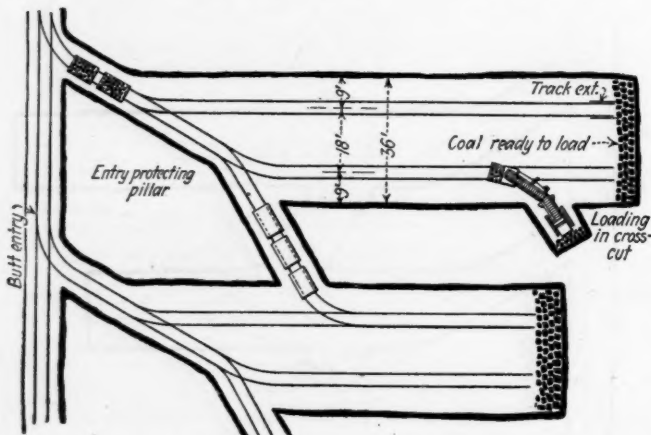


PLATE VI. LAYOUT WITH DOUBLE-TRACK ROOM

In this plan also the crosscut is used to facilitate storage and shifting of cars. Crosscuts, usually an inconvenience in this instance, merely furnish an additional loading place and therefore more coal for each long move.

In reference to Plate I, as soon as a crosscut between rooms is completed the track is connected, as shown, between rooms 5 and 6. This track forms a run-around for cars when the machine is loading in room 6, the empty cars being stored in the crosscut, as shown on Plate III, which is an enlarged detail of development as it has progressed in rooms 5 and 6. When the rooms have advanced to the stage shown in rooms 3 and 4

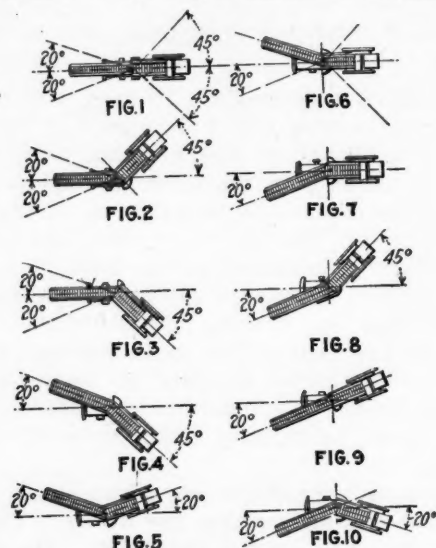


PLATE VII. DIAGRAM SHOWING FLEXIBILITY OF SHOVEL

Though somewhat long from the point of the shovel to the point of delivery of the conveyor it is possible to work round sharp corners as shown in illustration.

of Plate I, the track through the first crosscut is removed and the track in the second crosscut connected up. This brings the switching point for cars within a short distance of the face at all times and eliminates delay in removing the loaded car and bringing in the empty. This crosscut track also is well laid and entirely sufficient for moving the shoveling machine from one room to another. Therefore in moving from room 3 to 4, for instance, the machine has to run back only to the nearest crosscut and through it to the face of the adjoining rooms.

In Plate I room 1 has reached its limit and a crosscut has been driven at the end of the room. The track end is fitted with a curve and brought across the face of the pillar. The pillar is drawn back, as shown in Plate IV, the curve and track across the pillar are moved up after each cut, the curve being connected with the room track by means of inverted rail jumpers. The distance between crosscuts should be made such that the entire pillar can be taken out in this way with the exception of a protecting stump, as shown on this sketch. This protecting stump is the only part of the coal that will have to be drawn by hand.

ARRANGEMENTS HAVE BEEN MADE for the shipment of two 1,000-lb. samples from the Deep River coal field of North Carolina to the central experiment station of the Bureau of Mines at Urbana, Ill., for coal washing tests.

A SPECIAL STUDY is being made by the Bureau of Mines at Pittsburgh, Pa., looking to the development of grates and furnaces to utilize lignite char, to be used in heating and cooking stoves. James Neil, fuel engineer, and M. L. Orr, assistant mechanical engineer, have been assigned to the investigation.



## Self-Dumping Gable-Bottom Mine-Refuse Car Builds Its Own Inclined Track

BY ALPHONSE F. BROSKY\*  
Pittsburgh, Pa.

IN DUMPING the slate, sandrock and clay that come from a mine the topographic features of the surface have a direct bearing on the choice of method. Many schemes are in successful operation for the disposal of such refuse, each working to advantage under the particular conditions that the location imposes. The problem is simplest where the surface is broken by gullies or ravines that are near enough to the tippie to make it practical to haul the slate to that point and large enough to insure dumping capacity sufficient for the life of the mine. In such cases an electric slate larry is desirable.

Slate disposal becomes more difficult, however, where the ground is level. Either of two methods may be chosen under that condition. Where a large expanse of level ground is available for dumping, an electric larry may be used here also, the slate bank rising on a slight grade. When the dump area is limited, however, it may be wise to make the inclination steeper than the use of a larry will permit and radiate dump piles away from the tippie structure.

Under these circumstances each dump somewhat resembles a miniature mountain, its height rising rapidly in the direction of its major axis. To dispose of slate in the fashion noted it is necessary to raise the car by a rope hoist.

Several of the larger companies have adopted the aerial cableway for the disposal of mine refuse on level ground. An inclined cable rises from the rock bin to a lofty tower. A rock carrier, or bucket, suspended from a pulley travels along this cable and is raised by means of a rope passing over a sheave located on the tower and leading thence to a hoist conveniently placed on the ground. When the dumping point is reached the contents of the carrier are discharged by the action of a trigger. The great disadvantage in this device lies

in the erection of the tower, the weight of which is appreciable. After a slate dump of this kind has been completed the tower must be moved, and this is difficult because of its height and weight.

The H. C. Frick Coke Co. has adopted a method of slate disposal that builds a pile comparable to that constructed by the aerial cableway. The principle indeed is by no means new. The idea in fact came from the Illinois field, but since its adoption the method has been improved. It has now been accepted as standard by the company.

A self-dumping car is drawn up the steeply graded slate dump which it has gradually accumulated. At the top of the dump is an open-rail platform from which the slate is discharged. This dock is supported at its rear end by the slate pile and at the forward end by a single trestle bent.

The car is saddle-backed, or gable-bottomed. It is of a composite steel-and-wood construction. It has a capacity of 75 cu.ft. and opens and closes automatically, so that no attendant other than the hoistman is needed. The general plan of this car is shown in Fig. 1, while Fig. 2 is a photograph of the same piece of equipment. The side gates are hinged at the top and secured in place by latches. When these are released the doors fall from an inwardly inclined to a vertical hanging position. The first position, which is that assumed when traveling, is shown in the left-hand elevation of Fig. 1. The arms of the latches are end-pivoted in the center of the car. Suspended from the midway point of these arms are vertical push rods bearing rollers on their lower ends which on passing over lifter tracks release the latches. The doors then swing out into the vertical position and the slate discharges onto the dump.

If conditions are such that dumping from one side only is advisable a single lifter track is placed between the rails. In that case a large sheet-iron floor plate may be inserted on the side opposite that where dumping takes place, thus making the car bottom or floor one plane. This arrangement is not shown in the drawing but has been adopted at one of the company's mines. One disadvantage entailed in discharging from

\*Bituminous editor, *Coal Age*.

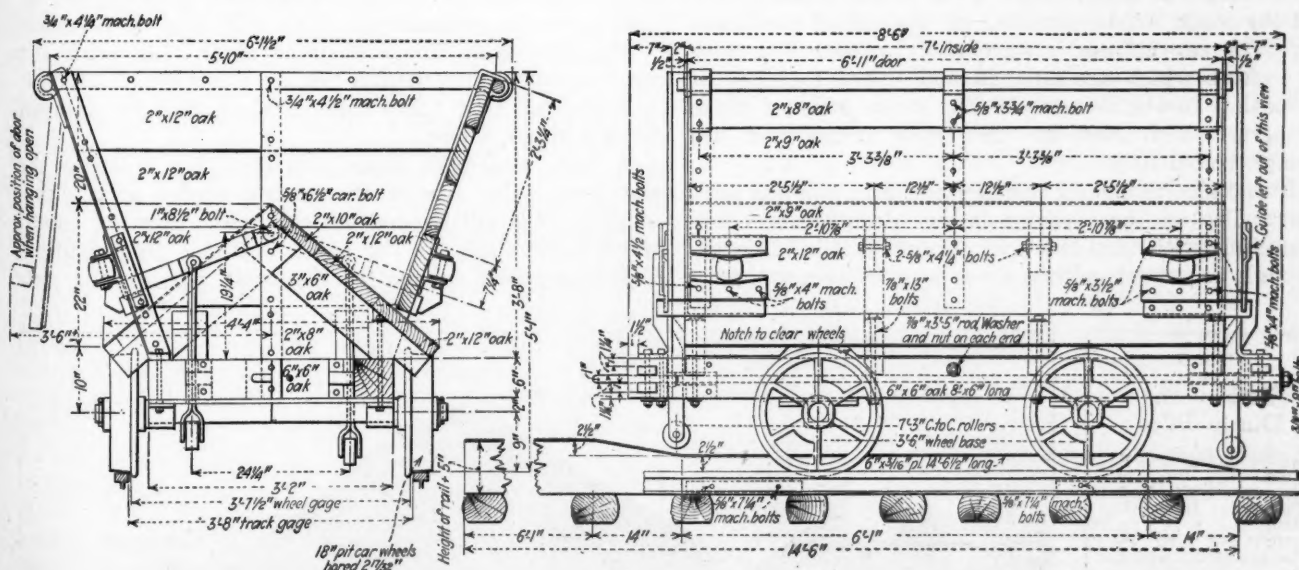


FIG. 1. MINE-REFUSE CAR WITH PUSH RODS TO OPEN LATCHES AND RELEASE DOORS  
The front push-rod rollers are made higher than the rear ones so that they can pass over the first part of the lifter tracks, only to come in contact with the second part at the time when the rear push-rod rollers begin to rub on the lifter track. Thus the side gates are released at both ends at the same time. The rollers at the sides of the car engage two converging cam guides which force the doors to close. The latches, being free, fall and hold the doors in place.

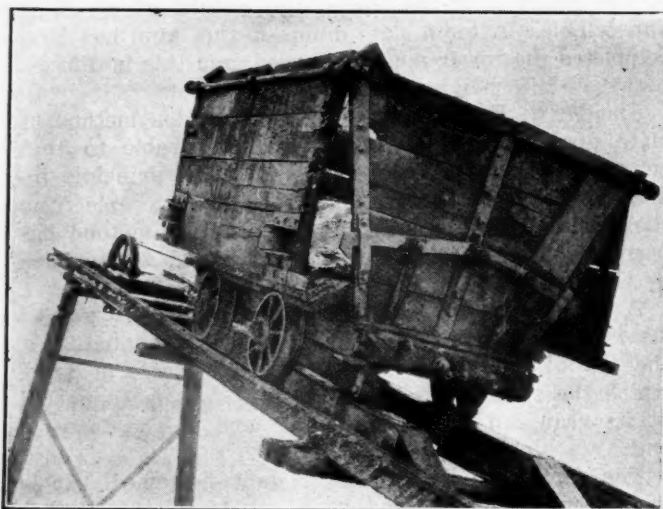


FIG. 2. MINE CAR AND FORWARD BENT

Doors are shown hanging vertically. Note the lifter tracks for raising the push rods, and the hinges which attach the bent to the rails.

one side only is that the capacity of the car is much decreased.

When the car passes between two converging cam guides they force the doors to the closed position. These guides are firmly mounted on masonry piers or posts set in the ground between the bottom of the dump and the tippie. The gates are provided with contact rollers placed level with the cam guides.

It will be noted that the truck is not of standard mine-car design, being rather proportioned to suit the requirements of the body. Standard loose wheels and fixed axles are used. The inner axle collars are shrunk on and the axles are fastened to the longitudinal members of the 6 x 6-in. truck frame by means of  $\frac{3}{8}$ -in. bar-iron brackets. The design and attachment of the drawbar is such as is adaptable only to a car that operates alone. As the drawbar always is subjected to a pull, the bar is rigidly fastened and has no buffer. It consists solely of a hook bar 1 in. in diameter that passes down the center of the car and pierces the two end members of the frame. Thus there is no danger that the truck will be sundered by the pull of the drawbar. The car bottom is supported by four 3 x 6-in. oak rafters which are notched and bolted together at the peak. Insets are cut in the lower ends of these members, which rest on the truck frame and are through bolted to it.

Little difficulty should be experienced in building such a car. The one here shown is well designed and will indefinitely withstand the work for which it is intended. Through use, weak points have been overcome, and a

superintendent need not hesitate in adopting the general design shown, if the conditions for its operation are favorable. It will readily handle 200 tons or more in 8 hours.

Heavy, well-joined rails are requisite where slate is dumped on the ascent. From the rock bin to the edge or the discharge dock the Frick company uses a 70-lb. rail spiked to wood ties on the roadbed. The dumping platform consists of a pair of 30-ft. 85-lb. rails tied together by heavy angle irons bolted to the rail bases. The journal boxes of a 24-in. sheave at the outer extremity of the dock are securely bolted to an angle-iron anchorage. The farther end of the platform rests on an oak bent 16 ft. in height which is hinged to the rails. The legs of this bent are of 6 x 6-in. oak, diverging to a 9-ft. base, where they are bolted to an oak sill of similar dimensions. Tie bands of  $\frac{1}{2}$  x 2-in. strap iron add rigidity to the bent.

The bent is substantial and compact and rests on a footing in the slate pile lower than the crest. When the slate reaches the level of the platform the track may be moved outward with ease. The slate is first removed from around the bent, it being thrown forward along the line of the dump. In this way a mound is formed the crest of which is at a greater elevation than the base level of the bent. The rise is such as to correspond with the predetermined grade. The bent is jacked up and its foot moved out to the new position, the frame itself being thus held obliquely. The fish-plates are removed at the joint where the 70- and 80-lb. rails meet, a rope is attached to the heavier section and the frame is pulled out over the dump until it again forces the bent to a vertical position. In accomplishing this shift the rope is carried forward parallel to the rails and passed through a snatch block, from which it returns.

Four men do the track shifting, each move advancing the dumping point 10 ft. Three pairs of 70-lb. rails, respectively 10, 20 and 30 ft. in length, are kept on hand. At the first move beyond a 30-ft. rail a 10-ft. length is inserted. On the second move this is taken out and a 20-ft. rail length put in its place. On the third move the 20-ft. rails are replaced by 30-ft. pieces, which remain permanently. The cycle is then repeated.

The four men who are employed in this work can make a shift in five hours. At an elevation of 45 ft. it is estimated that 1,200 tons of slate may be dumped from a single set-up.

A  $\frac{1}{2}$ -in. steel-wire rope is utilized for hoisting the slate car. The size of the engine needed at a dump of this kind will depend entirely upon existing conditions, particularly on the space available for dumping. The horsepower requisite for a hoist used on any par-

FIG. 3

### Two of the Dump Piles

At Hecla No. 1, Southwest, Pa., of the H. C. Frick Coke Co. It is difficult to obtain height so long as the grade by which the dump grows is that up which an electric larry can climb. For this reason a ropeway is used at Southwest.





ticular slope may be determined by means of the following simple formula:

$$\frac{H.P.}{33,000} = \frac{Vf(W_i + W_r)}{33,000} + \frac{(W_i + W_r)V \sin \theta}{33,000}$$

where  $V$  = the speed of car travel per minute and must be assumed,

$f$  = frictional resistance, the value usually assumed being 0.025,

$W_i$  = weight of loaded car,

$W_r$  = weight of rope,

and  $\theta$  = slope in degrees.

An electrically driven hoist is the most desirable type for this class of work, a shunt-wound, direct-current motor being best suited for the purpose. In the building up of the dump care should be exercised to maintain a uniform slope. A lessening of the degree of inclination at any point will result in the formation of a hump which will impose undue wear on the rope. If the degree of slope is increased at any point there is danger of placing too great a load on the hoist and possibly of burning out the motor.

### Speedy, Safe and Economical Entry Driving Attained by Use of Self-Acting Pipes

BY F. C. CORNET  
New York, N. Y.

PIPES are so little suited to the economical transportation of large volumes of air and so liable to accidents of many kinds that it is inadvisable to use them in regular coal-mine ventilation where, as a general rule, a cheap and superabundant air supply must be provided.

For temporary and local ventilation within reasonable limits of distance and volume, however, air pipes have advantages the possibilities which do not seem to be fully appreciated by coal-mine engineers. Instances where pipe ventilation is resorted to in coal mines undoubtedly are numerous, but in practically every case a special fan is employed to force or draw air through the pipe, when the desired result could be automatically accomplished by taking advantage of the pressure exerted on the atmosphere of the mine by the outside fan. How this is done in the simplest possible way I explained in *Coal Age* many years ago.\* I now desire to treat the subject more fully, showing the possibilities of the air pipe as a practical, cheap and most efficient means of ventilation, one permitting headings and single places of comparatively great length to be driven through the most gaseous of seams with a safety and a rapidity made possible by no other known method of ventilation.

Fig. 1 shows the most efficient way of ventilating automatically by means of pipes the several faces of a heading. A temporary stopping,  $A$ , built across the aircourse is provided with two openings in which are tightly fitted the ends,  $B$  and  $C$ , of pipes 1 and 2, the other ends of which are  $D$ , near the aircourse face, and  $E$ , near the haulway face, respectively.

If the air current set in motion by the fan travels in the direction indicated by the single-point arrows, pipes 1 and 2 will discharge air toward the faces they are intended to ventilate, the tubes in this case being termed "blowpipes." If the ventilating current moves in the direction indicated by the double-point arrows, air is drawn into both pipes through their mouths

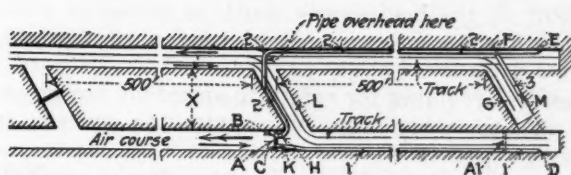


FIG. 1. AUTOMATIC AIR PIPES WITH STOPPING ON AIRWAY

This will work with exhaust or pressure methods, the double-point arrow showing the exhaust system where the air is drawn into the pipes and the single-point arrow the pressure system where the air is forced into the pipes.

$D$  and  $E$ , the tubes then being called "exhaust pipes."

In the former case, where the air enters the face through the pipes, if the total distance from  $B$  to  $E$  does not exceed 600 ft. and if the water gage at  $A$  is not less than a half inch, and if, moreover, 16-in. round galvanized-iron pipes are used with discharge ends  $D$  and  $E$  within 15 or 16 ft. from the faces, the air will be discharged from the pipes with such a velocity and in so great an abundance that every square inch of face will be completely swept by fresh air. Thus explosive mixtures cannot be formed, and the use of naked lights at all times will be permissible.

The pipe generally is laid on the floor against one of the ribs, the last joint being deflected a little toward the center of the place. To increase the velocity of the outflowing air without reducing its volume a conical cap 4 to 6 ft. long is placed at its extremity, one end fitting the main pipe and the other being of a diameter 12 in. less. Thanks to this cap the velocity of discharge in general is so much increased that the pipe orifice can safely be kept so far from the face that the pipe will not be injured when blasting.

In limiting, as I have done above, the ultimate length of pipe 2 to 600 ft. I have taken into account the necessity of tapping pipe 2 at  $F$  for the purpose of ventilating crosscut  $G$  by means of a secondary pipe, 3. So long as the width,  $X$ , does not exceed 50 or 60 ft., pipe 3 will be of ample size if of 12 in. diameter. Butterfly regulators, made like ordinary stove-pipe dampers, are placed in the air pipes at  $H$  and  $K$ . Moderately open at first, these regulators are gradually opened wider as the air pipes grow longer. In the case illustrated in Fig. 1 and with the length of heading, diameter of pipe and water gage given, regulator  $H$  would not require to be opened in full until after pipe 3 had been installed and put in commission. The driving of crosscut  $G$  will not retard the extension of the haulageway, for there is plenty of air for both of them. But after the new crosscut,  $G$ , is through and rail communication with the aircourse is established in that manner, stopping  $A$  is transferred to  $A_1$ , the base of the pipe system is advanced 500 ft. and all unnecessary steel is removed from the aircourse and crosscut  $L$ . The latter is then stopped tightly by a cement wall, thus clearing the ground for another continuous advance of 500 ft. Were it not for the necessity of placing a tee at  $F$  to ventilate

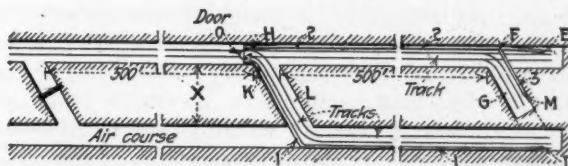


FIG. 2. SAME PIPES WITH DOOR ON MAIN ROADWAY

Air enters in this case by the main roadway and returns by the aircourse. As a result the stopping must be on the roadway and a door must be used to pass cars. Only by this method can really gassy mines be satisfactorily ventilated where the air enters by the roadway.

\*Dec. 14, 1912; Vol. 2, p. 825.

crosscut *G*, the haulageway could be driven in perfect safety through gaseous coal at least until the length of pipe 2 became 800 ft.

Besides providing for safety to an extent unapproachable in any other way, the ventilation system just described necessitates the driving of only one crosscut through the pillar, whereas if the ordinary method is followed, eight must be cut through. Thus the cost of laying and taking up switches and building stoppings is reduced in the proportion of eight to one. The cost of installing and maintaining good pipe systems is less than that of erecting and keeping up wood and canvas air-conveying contraptions, not, it is true, those of the flimsy, cheap, make-believe kind too often seen even in so-called big mines but the more substantial and effective sort that is obligatory if the headings in gaseous seams are to be driven in comparative safety and with any degree of rapidity.

Continuous, never-failing safety, the kind miners soon learn to trust without question, in itself makes for rapid driving. Speed is further accelerated considerably by doing away with the delays and lost motion that would accompany the driving of numerous crosscuts and the never-ending laying of switches and building of stoppings.

In nine mines out of every ten the men who drive the two straight places of a heading insist also on driving the crosscuts, thus stopping work in the former while busy in the latter. How can headings be driven fast under these conditions, if a new crosscut has to be made every 60 ft.? No immediate profit is derived from driving headings. The longer it takes to complete them the longer the capital they absorb remains unproductive. Hence all means leading to their rapid completion and utilization will save money.

#### EXHAUST PIPES UNSUITED TO GAS REMOVAL

Referring again to Fig. 1 and assuming that the ventilating current travels in the direction indicated by the double-point arrows, suggesting that the mine is ventilated by an exhaust fan, it will be easily understood that, before entering the pipes at their mouths, *D*, *E* and *M*, the air travels through places of comparatively large cross-section. Hence it moves slowly—too slowly to have enough energy to sweep away the gas instantly as it comes out of the coal.

Even if the mouth of a pipe is kept only a few inches from the face, which cannot be done in actual practice, the suction will be insufficient to remove the gas fast enough to make the place safe for operation with naked lights. Only the gas coming out of the seam in the immediate neighborhood of the mouth of the pipe goes promptly into the latter. It is unnecessary to say that no conical cap of the kind just mentioned is used with exhaust pipes.

In mines ventilated by exhaust fans the arrangement shown in Fig. 2 is used. The operation of this system requires no lengthy explanation. That it works in all particulars as efficiently as the blowpipe arrangement fully described above is easily understood from a comparative study of Figs. 1 and 2. The door, *O*, constitutes a drawback, but it is inevitable when the blowpipe system is used in combination with exhaust ventilation.

Ventilation of the kind herein described is not used as extensively in this country as in Europe. I have installed with great success automatic blowpipes in a viciously gaseous West Virginia mine where work had

been suspended and where serious contemplation was given to abandoning the mine, the time-honored brattice system of conveying air having proved a costly failure, practically all the men having left, being rendered apprehensive by reason of the frequency of explosions.

I have employed the same method, also in West Virginia, to drive a single heading to the outside, a distance of 1,440 ft., using without restraint the worst kind of smoky, ill-smelling dynamite and cleaning three 5½-ft. cuts daily.

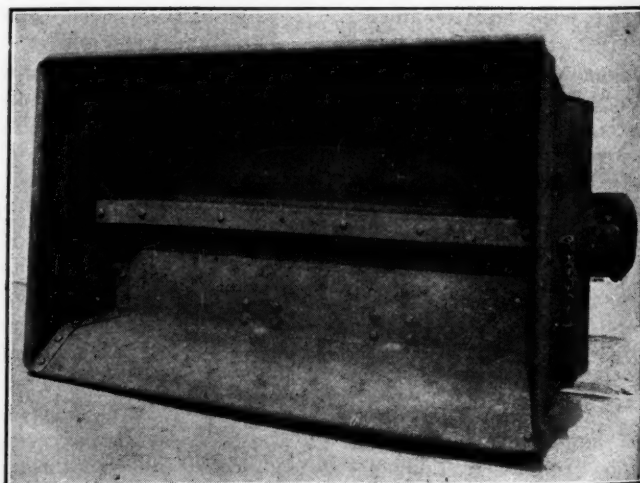
In Belgium a single place driven in the coal between workings in preparation at a new low level and old workings in the level immediately above is termed a "montage." In such places blowpipes with exhaust ventilation are the recognized means whereby air is supplied to the men at work. Places are driven by this means often on extremely steep pitches between levels having a difference in elevation seldom less than a thousand feet.

#### Weight Saved and Stiffness Added to Cars By Use of Pressed Steel Units

**S**TAMPING or pressing a tin pan or other kitchen utensil from a single piece of metal, giving the finished top a rolled edge, is an old process the product of which is familiar to everyone. The accompanying illustration shows the result of applying the same or at least an analogous process to the manufacture of mine cars.

The body of this car, which is of the "solid" type, consists of three pieces—the bed and the two ends. These are bolted together, the ends being flanged for that purpose. In the center of the bottom an inverted longitudinal groove is pressed which receives a wooden stringer that forms the bumpers at either end. These, of course, are covered and protected with a suitable forged steel plate. A through drawbar bolted to the stringer and car bottom furnishes an efficient means of coupling. The top of both the bed and ends is flanged over to afford stiffness.

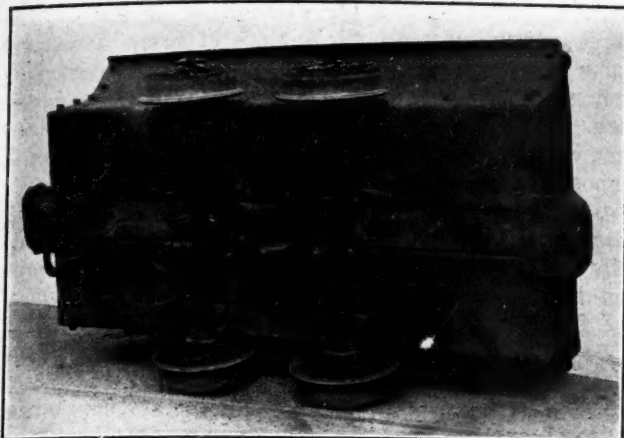
Trucks of any desired type may be applied, also any of several attachments such as the car-haul lug shown in one of the accompanying illustrations or other variations which may happen to suit local conditions. In



STEEL CAR BODY BUILT UP OF ONLY THREE PARTS

Where would we have arrived if automobile bodies had been made of stiffening bars and a covering of plates bolted into place? The mine car is going to be shaped after a while in the same manner as an automobile. We have already attained to a three-piece car body bolted together with rolled edges to stiffen the plates.





### UNDERSIDE OF PRESSED STEEL CAR

An inverted longitudinal groove is pressed in along the center line of the car bottom. A wooden stringer is set in this channel and it forms the bumper at each end.

this respect, as in all others except details of construction, this car is exactly like any other of similar shape and capacity.

Although the dies for making these cars are somewhat expensive, once these are made a car can be turned out at small cost and with great rapidity. Cars of this type may be shipped knocked down, to be assembled at the mine. When thus shipped the space required is small, as the various pieces will nest readily. Should a car be disabled in a wreck the various pieces can be returned to the factory, where they can be passed through the forming press and restored to their original shape. This car will soon be manufactured to such shape and dimensions as the customer may specify by the Johnstown Steel Car & Supply Co., of Johnstown, Pa.

## Wood Pipe vs. Cast-Iron for Large Lines

**S**O MANY large water mains are laid to mines for domestic uses and for quenching coke, as well as for draining away mine water, that a paper by J. W. Ledoux, consulting engineer of Philadelphia, Pa., read at the annual convention of the American Water Works Association will be of interest. It will be remembered that he is talking of permanent pipe, whereas mining engineers usually regard 25 years as looking far enough into the future. He says, among other things: For all water main of ordinary size, cast-iron pipe generally is regarded as standard. More cast-iron pipe is used for the carriage of water than all other pipes combined, the reason being that cast-iron pipe can be made absolutely tight under all circumstances and will remain so under all variations of pressure. For very large sizes, however, it is too costly as compared with wood or steel, and under many situations the reduction in capacity due to tuberculation is so serious that engineers will prefer a reinforced-concrete or wood pipe.

Undoubtedly wood pipe comes next to cast iron in the generality of its use. It may be conservatively stated that cast-iron pipe will last one hundred years. Although there are many modern wood pipes that have been giving good service longer than 25 years, when we compare wood with cast iron it is best to assume a short life for the wood pipe.

As an example, let us take 24-in. continuous redwood pipe and assume a life of 25 years. Say the wood pipe will have to be renewed four times in 100 years and

TABLE I—SAVING BY USING WOOD RATHER THAN CAST-IRON PIPE

	Wood	Cast Iron
Initial cost of 24-in. pipe.....	\$41,900	\$67,600
Increase in cost of cast-iron pipe to obtain 20% increased capacity.....		6,450
Initial cost for equal average capacity.....	\$41,900	\$74,050
Annual Charges:		
Wood pipe—repairs 1%, taxes 0.6%.....	\$670	
Cast-iron pipe, repairs 0.25%, taxes .6%.....		630
Present worth of \$41,900 at 5% for renewal in 25 years.....	\$12,373	
Present worth of \$41,900 at 5% for renewal again in 50 years.....	3,654	
Present worth of \$41,900 at 5% for renewal again in 75 years.....	1,079	
Present worth of \$41,900 at 5% for renewal again in 100 years.....	319	
Present worth of \$670 per year for 100 years at 5%.....	13,400	
Present worth of \$630 per year for 100 years at 5%.....		12,600
Initial cost for equal average capacity.....	41,900	74,050
Total present worths.....	\$72,725	\$86,650
Saving (about 20%).....	14,488	

cast-iron pipe will last indefinitely. Let us take the average discharging capacity for the wood pipe as 20 per cent greater than that of cast iron. Table I shows the details and results of a cost comparison, computed on the basis of present worth.

For machine-banded Eastern pine (also 24 in.) the initial cost would be \$28,900 as against \$41,900, but after making the same calculations as are shown in Table I the present worth figures obtained for wood pipe would be \$50,125 and for cast-iron pipe \$86,650, a saving of \$36,525.

WOOD PIPE DECLARED CHEAPEST NOW AND IN END

For 12-in. machine-banded Eastern pine pipe the initial cost would be \$14,900 for the wood pipe and \$26,900 for the cast-iron pipe. Making the same calculations as before, the present worth of the total cost of the wood pipe would be \$25,847, and of the cast-iron pipe \$34,027, or a saving of \$8,180, 28 per cent of the initial cost of the cast-iron pipe.

When a financial comparison on a rational basis shows such a material advantage of wood over cast-iron pipe, the question naturally arises, why is cast iron so universally preferred by most of the leading engineers? It is, no doubt, because there have been so many unfortunate experiences with wood pipe.

From our knowledge of water pipe, it may be said that the best pipe that could be obtained for any purpose would be cast iron with some sort of non-corrosive and indestructible inner lining, but in ten years from now this statement may be obsolete, and Mr. Ledoux is of the opinion that we are on the eve of great and fundamental improvements in water-pipe manufacture. However, it is believed that it will be many a decade before the use of wood pipe will be unwarranted.

TABLE II—COMPARATIVE COST PER FOOT INSTALLED OF WOOD AND CAST-IRON PIPE FOR 65-LB. PRESSURE

Nominal Diameter In.	Machine-Banded Pine	Wood Redwood	Pipe Fir	Continuous Redwood	Wood Pipe Fir	Cast-Iron Pipe at \$44 Per Ton	
6	\$0.96	....	....	....	....	\$1.26	
12	1.49	....	....	....	....	2.69	
20	2.29	\$3.70	\$3.27	\$3.43	\$2.92	5.21	
24	2.89	4.84	4.31	4.19	3.58	6.71	
30	4.13	....	....	5.27	....	9.13	
36	....	....	....	6.35	....	12.02	
48	....	....	....	9.50	....	8.90	
Trenching is for all kinds of pipe taken as follows:							
6-In.	12-In.	20-In.	24-In.	30-In.	36-In.	48-In.	
\$0.37	0.52	0.76	1.00	1.15	1.40	2.00	
The following weights of pipe are taken in pounds per lineal feet:							
	6-In.	12-In.	20-In.	24-In.	30-In.	36-In.	48-In.
Machine banded pine...	15	22	38	49	85	...	...
Machine banded fir....	...	...	37	40	...	...	...
Continuous redwood....	...	...	35	44	60	76	115
Continuous fir.....	...	...	38	48	66	83	125
Cast iron.....	31	76	160	210	300	407	660
Hauling taken at \$2 per Ton.							

## Advantage of Electric Hand Lamp, One Type Of Which Contains Solid Electrolyte

**A**LTHOUGH the utility of the electric cap lamp in mine illumination is well recognized and it fills a need that has long existed, the hand lamp possesses advantages found in no other type of illuminator. Among these might be mentioned the equal diffusion of light in all directions rather than its concentration on one point or a comparatively small area, and a light flux of at least twice the volume of that emitted by the cap lamp. Furthermore, the hand lamp is hung upon a rib or timber, leaving the miner free to work unencumbered by any harness, battery or lamp. In addition to this the hand lamp is less delicate in construction and consequently less liable to derangement or injury than the cap lamp.

A new electric hand lamp, known as the Ceag R M C and embodying many innovations and advantages hitherto not employed, has recently been placed on the market by the Concordia Electric Co., of Pittsburgh, Pa. Two of these lamps, one fitted with a white dome and designed for miners' or foremen's use and one fitted with a red dome and a detachable bracket for attaching to the end gate of a car and intended to be used as a tail light, are shown in the accompanying illustration.

These lamps are, as usual, made in two parts—a lower and an upper. The lower portion consists of the battery, its container and the necessary contacts. The battery container is of pressed steel heavily tinned and fitted with an extra bottom cap welded in place. The negative battery element is placed directly inside the case, which is lead-lined, while the positive element, which is a hollow cylinder, is placed concentrically within it. Both elements are held in position at the bottom by means of celluloid crosses and rubber washers.

Probably the greatest innovation embodied in this lamp is the electrolyte employed. This is neither acid nor alkali; in fact is not a liquid. Solidifying the electrolyte results in many advantages, chief of which is that all possibility of leakage is obviated and that turning the lamp in any position whatsoever in no wise affects the amount or brilliancy of the light emitted. Thus the lamp may be turned completely upside down

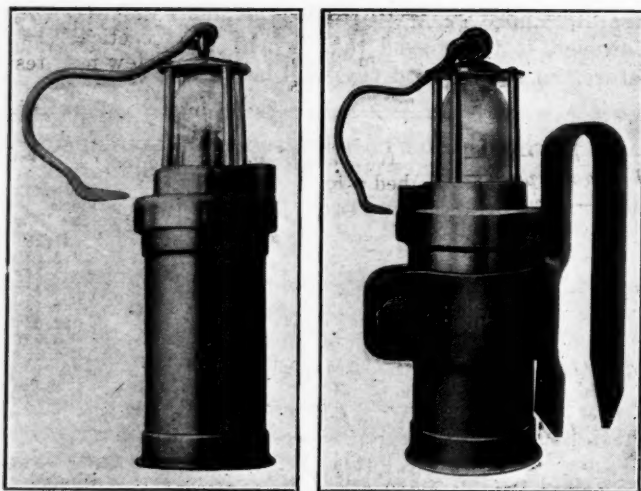
without either spillage or diminution of light. The upper portion of the lamp is made of brass, which assures freedom from corrosion. It is joined to the battery case by means of a square thread and a magnetic lock. This latter will operate only when in proper contact with the magnetic unlocking device, and it thus is impossible for any unauthorized person to separate the two portions of the lamp. The light bulb is held in place within a heavy glass protecting dome by means of springs. Upon fracture of the globe these springs immediately break the electrical connections without the formation of a spark.

Specifications for this lamp are as follows: Average discharge voltage, 2; mean candlepower,  $2\frac{1}{2}$ ; rated capacity in ampere-hours, 11; burning hours per charge, 12 to 13; normal charging rate, amperes,  $1\frac{1}{2}$ ; length of charge period, hours, 7 to 8; total weight of complete lamp, about 5 lb. This lamp has been tested and approved by the Bureau of Mines. In addition to its applicability to underground operations it is being used in powder plants, arsenals, on battleships, submarines, in lighthouses, by municipal fire departments, in gas works, oil refineries and the like.

**MINE SAMPLES OF COAL** from the Chickaloon field in Alaska, submitted by the Naval Alaskan Coal Commission, have been analyzed at the Pittsburgh (Pa.) experiment station of the U. S. Bureau of Mines. The analyses show a high ash, low volatile coal, but it is hoped that washing will greatly reduce the amount of ash. The Department of the Interior recently took charge for the navy of the Chickaloon mine, the Coal Creek mine, and other prospects on government reservations. Operations were placed in charge of the Alaskan Engineering Commission, the inspection, however, remaining under the Bureau of Mines. The Naval Alaskan Coal Commission mined during the month of April from the Chickaloon mine 2,352 tons and from the Coal Creek mine 33 tons. This coal was mined for the purpose of obtaining a large sample for naval testing. The Alaskan Engineering Commission is prospecting for coal with a diamond drill at Chickaloon.

**IN ANSWER TO QUESTIONS** by members of Parliament as to the coal supply of the Canadian railways, information was given by the government that the Canadian National Railway management has a contract with the Youghiogheny & Ohio Coal Co., of Cleveland, for approximately 1,000,000 tons per annum, which expires Dec. 31, 1923. This tonnage covers railway requirements for western and northern Ontario and lines to Winnipeg and East, the basis of the price per ton, including duty, being substantially lower than the price at which Canadian coal can be obtained within the area mentioned. Preference is given to Canadian coal and more Canadian than American fuel always is bought by the management, but where American coal, including duty, can be delivered at Canadian points more cheaply than the domestic product, the management will continue to buy to the best advantage. The Canadian National Railways purchased 1,000,000 tons from Nova Scotia collieries between April 1, 1921, and April 1, 1922, E. C. Vaughan, vice-president of the lines, told the Public Accounts Committee of the House of Commons recently. Mr. Vaughan declared that it was hardly fair to ask the National Railways to purchase coal in Nova Scotia for Ontario lines when American coal could be delivered at Cobourg, Ont., cheaper than Nova Scotia operators were charging at the mine mouth.

**AT BENBUSH, W. VA.,** a 16-year-old boy who had just started to work in the mines was trained in first aid by the crew of U. S. Bureau of Mines Car No. 8. The local mine superintendent reported that a few days later this boy found drowning in a spring a three-year-old child. The boy rescued the child and performed artificial resuscitation, thus saving the child's life.



HAND ELECTRIC LAMPS OF  $2\frac{1}{2}$  CANDLEPOWER

The lamp on the left has a white dome and is designed for the use of miners and foremen; that on the right has a red dome and a detachable bracket by which the lamp can be attached to the end gate of a car as a tail light.





# Problems of Operating Men

Edited by  
James T. Beard



## Continuous Operation of Mine Ventilating Fan

Safety the First Consideration—Expense Heavy in Idle Time  
—Conditions in One Mine Afforded Satisfactory Natural  
Ventilation—No Fixed Rule Can Apply to All Conditions

SINCE reading the excellent letter of "Mine Foreman," *Coal Age*, Mar. 30, p. 537, regarding the stopping of the mine fan in idle times, we have discussed this question from every angle. It is one on which all mining men do not agree, further than to allow that safety-first is the main consideration.

Personally, I have always felt that good mining practice required the continuous operation of the fan during the entire twenty-four hours of the day, under ordinary conditions. In a mine generating gas in any considerable quantity, my belief is that the fan should never be stopped, except in case of breakdown or urgent need for repair.

In that case, the men should be notified and withdrawn from the mine and not permitted to re-enter, until after the fan has been running a number of hours and the mine examined and reported safe for work. To guard against such emergencies a very gassy mine should be equipped with duplicate fans that can be operated alternately, one being held in reserve in case of accident to the other.

### EXPENSE OF RUNNING FAN NEED- LESSLY MUST BE CONSIDERED

While I have never advocated and do not now advise the shutting down of a mine fan during a period of idleness, this question was put up to me a while ago when in charge of a mine where the equipment was entirely electrical. The fan was located at a distance of about a mile from the power plant and operated by an electric motor.

It can readily be understood that the running of this fan during a period of idleness, when there was no need for power for other purposes, involved a heavy expense that the company was anxious to avoid. At the same time, they were unwilling to provide any other equipment for running the fan independently.

Under these conditions, I began to investigate in order to ascertain what effect the shutting down of the fan would have in the mine. My surprise can well be imagined on finding that there was almost enough natural ventilation to keep the mine safe when the fan was shut down, provided the air could be carried to the face of some of the more distant workings.

After making a few needed repairs on the stoppings, however, we were able to obtain a volume of 11,000 cu.ft. of air per minute in that district, which was sufficient to keep the mine cool and safe. It should be stated here, however, that there was no explosive gas and very little gas of any kind generated in this mine. The principal object was to secure a sufficient circulation to keep the workings cool and avoid the danger of spontaneous combustion.

### VENTILATION NOT WHOLLY NATURAL

Neither must it be thought that the condition I have described was wholly the result of natural ventilation. The heat from a steam pipe in the hoisting shaft, which was the upcast of the mine, greatly assisted the circulation. The steam was used to operate the pump at the foot of the shaft. Also a considerable amount of water was falling in the downcast shaft, which was another help.

The practice of shutting down the fan during an idle time has now been followed for over two years at this mine, and has proved satisfactory. The experience has taught me that no hard-and-fast rule can be applied to suit all conditions. What is safe practice in the mine just mentioned would be far from safe under other conditions and these conditions must be carefully studied, before deciding the question of stopping the fan on idle days.

Central City, Ky. OSTEL BULLOCK.

### Speed of Fan at Firing Time

*Slack ventilation and black powder cause explosion in mine—Decide to run fan at normal speed when firing.*

AN instance that occurred not long since and which might have proved a fatal disaster, brings to my mind the subject of whether a mine fan should be slowed down, run at normal speed, or have its speed increased, at the time when shots are to be fired in a mine.

This subject has been widely discussed by able men and the general conclusion seems to be that there are conditions when the fan should be run slower and others when it should be run faster, at the time of firing shots.

The instance to which I refer occurred in a mine where thirty-six men were

shooting coal off the solid with black powder. All shots were fired twice a day, at noon and again at 4 p.m..

The mine in question had much in its favor that would seem to render it almost immune from explosion. It is a wet mine and the 9 ft. seam has a fire-clay parting about the middle, which should assist in rendering inert any dust that might accumulate.

With these conditions in its favor, however, the mine exploded at noon, one day, flames coming out of the drift in large volume. The fan was so badly damaged that new parts had to be secured before the mine could be again operated. Fortunately, no one was in the mine at the time.

In this mine, it was the custom for all the men to come outside for lunch, at the noon hour. When word was given to fire, the men would all light their shots and run for the entrance and, on this occasion, every man was safely outside of the mine when the explosion took place.

Little damage was done inside of the mine, the force of the explosion being wholly outward, the inner workings acting as a *cul de sac*. Not a post was knocked down or a car displaced; but everything remained as the miners had left it a few moments before.

### LACK OF VENTILATION THE CAUSE

Speculation as to the cause of the explosion resulted in the unanimous conclusion that it was the natural result of insufficient ventilation at the time of firing. It can readily be imagined what the condition of the mine atmosphere would be if from fifty to one hundred shots, charged with black powder, were exploded, practically at the same time, or within a few minutes of each other.

All holes in this mine, were charged with black powder; and the hot gases set free when the first shot fired furnished a highly combustible atmosphere to be ignited by the flame of the later shots. Everybody apparently knew and realized this condition and reached the same conclusion as to what was necessary to avoid another catastrophe.

It was decided by all that there was not enough air moving at the working face to dilute and render harmless the gases produced in firing. On the other hand, it was argued that to increase the speed of the fan beyond the normal would cause a dangerous velocity of the air sweeping the working faces.

In view of these facts, it was the unanimous conclusion that the fan should be run, regularly, at its normal speed. In addition, it was decided to

repair all stoppings and use nothing but permissible explosives in blasting. This, it was hoped, would render the mine immune from further explosion.  
Pikeville, Ky. ENGINEER.

### Labor on Tonnage Basis

*Economy of mine labor—Practical effect of putting mine foremen on tonnage basis.*

**S**PEAKING in regard to economizing on mine labor, a mine foreman of Madisonville, Ky., in his letter, *Coal Age* Apr. 20, p. 660, advocates putting all mine employees, including the mine foremen, on a tonnage basis, as the best means of securing a full day's work for a full day's pay.

I have been wondering if our friend has stopped to consider for a moment, what would be the result of putting the mine foreman on a tonnage basis. Without reflecting any discredit on the honesty of mine foremen in general, let me ask if this proposition would not throw a strong temptation in the way of the average foreman.

Think for a moment what the rightful province of a mine foreman is and how he labors in a different way from the miner and other daymen working in the mine. While miners and daymen are chiefly interested in increasing the output of the mine, assuming they are all working on a tonnage basis, the foreman is responsible for looking to the future interests of the company, as well as increasing the daily tonnage.

The development of a mine with regard to the future and the conservation of the coal often makes present interests secondary to the future requirements. For example, areas of low coal must be worked out at once or lost; there is deadwork to be performed if the roads are to be maintained, abandoned places made safe and the working places properly ventilated.

### RESPONSIBILITY OF FOREMEN

It is up to the foreman to see that these and other matters are constantly given attention, though he knows that it means a certain curtailing of the possible output of the mine. The question is will the average foreman set aside his own personal interest in securing a heavy tonnage whereby his pay will be increased.

Now, it is human nature for every man to look to his own interests first and mine foremen are no better than other men in this regard. That being true, what would be the natural result of a mine foreman being paid on a tonnage basis. Would it not result in the following conditions?

There would be the temptation to work out cheap coal; rob entry pillars and take out blocks of coal that should remain until they can be removed with greater safety and economy a little later. Men would be put to work in places that should stand idle, for a time, in order to avoid undue pressure being brought on the pillars in other sections of the mine. Finally, the work of repairing stoppings, timbering air-

ways and keeping up the roads would often be sadly neglected.

Without going into further details, is it not true that every man's heart, including that of the foreman himself, would be wholly set on putting out a large daily tonnage, without proper regard for what that would mean to the future welfare of the mine and the best interests of the company.

Mayport, Pa. JAMES THOMPSON.

### Importance of Checking System

*Accident revealed only by failure of men to return home—Prompt rescue saves lives of two men caught by a fall—Checking system needed in every mine.*

**O**NE reads with deep regret reports of fatal accidents such as that found in the news columns of *Coal Age*, Apr. 13, p. 641, recording the deaths of two miners, working in the Woodward mine of the Glen Alden Coal Co., at Edwardsville, Pa.

While the report states that both of these men were probably instantly killed, their necks and backs being broken, it is not known at what time the fall occurred and how long a time may have passed before their bodies were found. The fact of the accident was only made known by the failure of the men to return to their homes, and a search was then made to ascertain the cause of their delay.

### IMPORTANCE OF CHECKING SYSTEM

Reflecting on these reports that come to our knowledge from time to time, one is forcibly impressed with the importance of a thorough checking system being installed in every mine. Allowing it is true that, in this case, such a system would not have saved the lives of these men, it still remains that there are numbers of instances occurring daily in which it would be effective.

In the present case, an investigation would have been made immediately following the time when all the men should be out of the mine. This instance recalls to my mind the experience some time ago of two men working on a pillar when a fall of coal and rock caught and held them fast until rescue finally came.

That accident occurred in mine 201 of the Consolidation Coal Co., at Jenkins, Ky. Had it not been for the prompt report of their plight, these men would also have been killed, as shortly after their rescue another fall occurred that would have crushed out their lives.

Personally, I am strongly of the opinion that an adequate checking system should be installed in every mine, and that this should be made compulsory by law. There are numerous systems of this kind in use; but to be effective there should be a check on every man who enters the mine, and the evidence of his going in should again be withdrawn on his coming out, whether his stay is for short or long.  
Edwight, W. Va. J. W. POWELL.

### Abandoned Workings in Mines

*No fixed rule possible—Many abandoned areas ventilated to advantage—Other areas dangerous if left open—Confined bodies of gas always dangerous.*

**I**N giving my views on the question of ventilating or sealing abandoned areas in mines, I must confess to having no fixed conclusion in this matter. In my opinion, it is a thing in which no hard and fast rule can be laid down.

After carefully turning over the question in my own mind, I feel that any law covering this subject should place it wholly at the discretion of the state mine inspector, who must be able to determine the method of procedure in any given case that will promise the greatest degree of safety in the operation of the mine.

### NO ARBITRARY STANDARD

To say that all abandoned workings shall be sealed, or all shall be ventilated, would be too much like setting up an arbitrary standard, without regard to the particular case, or giving a proper solution to the problem in hand.

Considering the diversity of coal-mining methods and systems, as we find them in the principal coal-producing states, I believe it is generally agreed that what will apply to the conditions in one district will fail to suit conditions in another district.

While there are undoubtedly districts where abandoned areas can be ventilated in a manner to prevent the accumulation of dangerous quantities of gas, the conditions in other districts and the methods of mining employed will hardly permit of this proceeding.

### STANDING GAS DANGEROUS

On the other hand, it is quite generally agreed that a standing body of gas, even though confined in a tightly sealed area, may prove a menace to safety and the security of the property. In other words, it is a hazard that invites a catastrophe and should not be permitted if it is humanly possible to prevent it.

In general, let me say that large abandoned areas in mines should only be sealed as a last resort, when it has been finally decided that such procedure will make the mine safer or less subject to disaster, by reason of the gaseous condition of the workings.  
Pikeville, Ky. GEORGE EDWARDS.

### Maintaining Tracks in Airways

*Ventilation inefficient in many mines—Airways practically neglected when tracks are drawn—Main airways blocked by falls, owing to lack of timbering.*

**I** HAVE read many references, in *Coal Age*, to the insufficiency of ventilation at the working faces in mines. Almost invariably, investigation will show that the cause is neglected airways that are choked by



falls of roof which prevent the free passage of the air current.

In a few instances, no doubt, the fault will be found in long lines of brattices, many of them in bad repair and leaky stoppings on the roads, which prevent the air from reaching the working faces.

In my own experience, I have found that whenever the track is drawn from a main intake or return air-course the result is that far less attention is given to the timbering of that airway; and it is not long before heavy roof falls occur, which obstruct the flow of the air and there is trouble.

#### SMALL FALLS OFTEN DISREGARDED

At first, these falls are small and of little consequence. But it should be remembered that they are the forerunners of larger breaks that will extend eventually several feet in height and length. Because the track has been drawn no attempt is made to clean up the falls and, for the same reason,

little timber is taken into the place and set. Had the tracks been allowed to remain, the condition would be quite different and there would not be the same objection to cleaning up the airway and keeping it properly timbered.

#### DANGER OF REMOVING TRACK

In my judgment, the removal of track from main air-courses means their practical abandonment to the consequences just mentioned. In many instances, I have known main airways to be almost completely blocked for several hundred feet, to the extent that it was almost impossible for a man to get through them.

One can readily imagine what the effect of this condition is on the ventilation of the mine. It is a matter that needs careful consideration. In my opinion, no main air-course should be left without a track on which refuse can be hauled out and the necessary timbers taken into the mine.

Hillside, Ky.

O. KENNETT.

## Inquiries Of General Interest

### Use of Carbon Monoxide Detector in Mines

Device Depends on Color Test—Absorbent Material  
Contained in Steel Tubes—Extra Tubes and Charge of  
Absorbent—Practical Tests Prove Instrument Useful

**K**INDLY explain the use and construction of the device known as the "Carbon Monoxide Detector," which I have heard has been used with success and is a more practical means of detecting this dangerous gas in mines, than by observing the effect of the gas on small birds and mice confined in a cage.

SAFETY INSPECTOR.

Ky.

This device, as developed and manufactured by the Mine Safety Appliances

and then forces it out through the detector tube E, which contains a highly acid substance that changes to a green color, under the action of carbon monoxide gas. The depth of the color depends on the percentage of gas present in the air passing through the tube.

As shown by the arrows in the figure, the air to be tested for gas is drawn through the metal tip or nozzle attached to the other end of the barrel A. In this barrel is contained, between

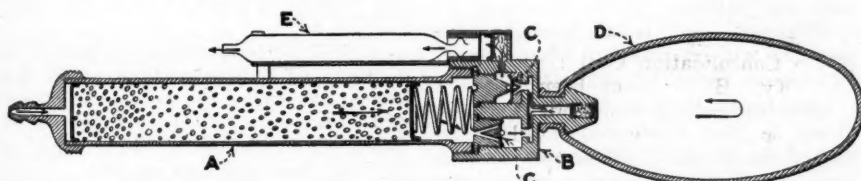


FIG. 1. LONGITUDINAL SECTION SHOWING CONSTRUCTION OF DEVICE

Co., Pittsburgh, Pa., is illustrated in the accompanying figures. It consists of a small metallic tube or barrel A, to one end of which is screwed a head-piece B, containing two valves C, C, an inlet and an outlet valve, which control the flow of the air-charged gas in its passage through the instrument.

To the head-piece B, is attached, as shown in Fig. 1, a rubber bulb D, the compression and expansion of which first draws the air into the instrument

two plate screens, a chemical substance that is capable of absorbing and removing from the air any gas it might contain, except carbon monoxide.

This absorbing material has been called "gasorbent." The material becomes saturated by use and must be replaced, from time to time, one extra charge being furnished with the instrument. In order to test the efficiency of the gasorbent, it is only necessary to take a fresh detector tube and make

a test in the regular manner in a gas-free atmosphere. Any color appearing in the tube, after twenty squeezes of the bulb, shows the gasorbent must be replaced by a fresh charge. This is done by unscrewing the head piece B, removing the screen and pouring out the charge, refilling the barrel and replacing the screen, and head.

The detector tubes E, are made of heavy glass and filled with a specially prepared chemical solid called "hoola-mite." Each end of a detector tube is sealed, by being drawn to a fine point, which is scored and easily broken off when about to make a test and before inserting the tube in place on the instrument.

When making a test with this instrument, both ends are broken off from a detector tube, which is then inserted in place on the instrument, side by side with another tube that furnishes a color scale for determining, by comparison, the percentage of gas present in the air tested.

When all is ready, squeeze the bulb ten times (Fig. 2) and compare the color produced in the detector tube, if any, with the color scale by sliding the latter along until a correspondence is reached in the color of the two tubes. The original color of the chemical is a grayish white, which changes to green, the intensity of the shade being an index of the percentage of gas present.

If no green color appears in the tube, after ten squeezes of the bulb, there is

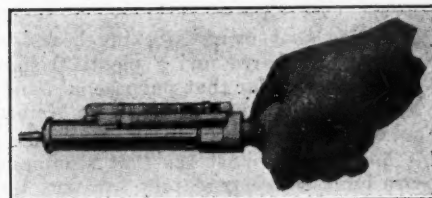


FIG. 2. MAKING A TEST FOR GAS

less than one-tenth (0.1) of one per cent of gas in the air tested. Again, no color showing in the tube, after twenty squeezes of the bulb, indicates that there is less than five-hundredths (0.05) of one per cent of gas in the air. Should more than one-tenth per cent of gas be present, coloration of the material will result from several squeezes of the bulb.

A single detector tube will last from eight to ten tests of ten squeezes each, before being exhausted, which is determined by the color failing to fade out after a test is made. Owing to the fading of the color after a test, it is important to determine the percentage of gas quickly. The slight smoke or fumes sometimes observed coming from the end of the tube when making a test is harmless.

Rubber tubes one-eighth of an inch in diameter are supplied with the instrument, to be attached to the tip end of the barrel, for the purpose of drawing the air from some high point in the roof, if desired.

## Examination Questions Answered

### Bituminous (Pa.) Mine Foreman's Examination Held April 11-13, 1922

(Selected Questions)

**QUESTION**—What are the duties of the mine foreman in regard to the following: 1, Reports; 2, Examining working places; 3, Measuring air currents; 4, Tracks and timbering; 5, Stoppings; 6, Coal dust; 7, Fencing off places, use of danger signals and removal of dangers; 8, Ventilation; 9, Accident to fan; 10, Extraction of pillars?

**ANSWER**—1. Foreman must sign reports of firebosses and assistants; make daily and weekly reports of condition of mine and air measurements; report all serious and fatal accidents to mine inspector; and report to the superintendent in writing any failure to remove gas from inaccessible places.

2. All working places must be examined each day by foremen or assistants.

3. Foreman or assistant to measure air at inlet, outlet, last breakthrough in last room and at face of entry, in each split, and report same once a week.

4. See that every working place is securely timbered and a plentiful supply of timber for that purpose on hand, or remove the workmen where timber is wanting.

5. Foreman must see that stoppings are built where necessary to carry the air forward to the face of the working; all stoppings on main entries and airways to be substantially built of concrete or masonry.

6. Foreman must see that accumulations of dust are kept damp, by suitable means or a sprinkling system. All dust accumulated at working faces must be loaded out of the mine.

7. Foreman must see that all dangerous places are promptly fenced off and danger signals placed to warn persons not to enter. He must see that all dangers reported are promptly removed or safeguarded.

8. The foreman is made personally responsible for all matters pertaining to ventilation and must see that a sufficient air current is kept in circulation and made to sweep all working faces throughout the mine.

9. In case of accident to fan, the foreman must remove the men from the mine and not permit them to enter again, until the mine has been examined and reported safe.

10. Foreman must attend to the drawing of all pillars in a safe manner and employ only experienced men for that purpose.

**QUESTION**—(a) In an entry 9 ft. wide and 5½ ft. high, the anemometer reads 225 ft. per min.; what is the volume of air passing? (b) Show the formula by which this problem is worked.

**ANSWER**—(a) The sectional area of the airway is  $9 \times 5\frac{1}{2} = 49.5$  sq.ft.; the volume of air passing is, therefore,  $49.5 \times 225 = 11,137\frac{1}{2}$  cu.ft. per min.

(b) Calling the quantity of air in circulation,  $Q$ ; sectional area,  $a$ ; velocity of air current,  $v$ ; the required formula is  $Q = av$ .

**QUESTION**—State why, in your opinion, the pressure or water gage increases as the workings are extended, other conditions remaining the same.

**ANSWER**—The pressure or water gage is a measure of the mine resistance, which is determined by the extent of the rubbing surface and the velocity of the air current. As the mine is extended, the rubbing surface is increased, which increases the mine resistance and the water gage.

**QUESTION**—(a) Name and give the symbols and specific gravities of the non-explosive gases. (b) What are their effects on life and combustion?

**ANSWER**—(a) The non-explosive mine gases are carbon dioxide ( $\text{CO}_2$ ); specific gravity 1.529; and the nitrogen of the air ( $\text{N}_2$ ); specific gravity 0.967.

(b) Carbon dioxide, though not a poisonous gas, has a distinctly toxic effect on the system. It is an incombustible gas that will not support life or flame, but causes death by suffocation when breathed in sufficient quantity. In less quantity, it causes headache and nausea.

Nitrogen, also, is an incombustible gas and will not support life or flame, but causes death by suffocation.

**QUESTION**—In mine ventilation: 1. What is the minimum quantity required by law? 2. What are the advantages derived from splitting the air? 3. What is the effective limit in splitting the air current? 4. Why is it necessary to use a regulator? 5. What are the requirements of the law in regard to principal doors? 6. What does the law require in regard to checking the air current into the working places?

**ANSWER**—1. In non-gaseous mines, the law requires 150 cu.ft. per min.; and in gaseous mines, 200 cu.ft. per min., for each person employed and as much more as one or more of the inspectors may consider is required.

2. Splitting the air current gives a larger quantity of air circulated by the same power, at a less velocity. Each district is provided with a separate air current that isolates it more or less from other sections of the mine and the ventilation of the workings are under better control.

3. Splitting reaches the limit when the velocity is so far reduced as not to dilute, render harmless and carry away all noxious and dangerous gases.

4. A regulator is required to proportion the quantity of air to the need in each split.

5. Principal doors must be so placed that when one door is open another having the same effect on the current will remain closed. An extra door must then be provided to be used in case of necessity.

6. The law requires the mine foreman to see that cut-throughs are provided in all room and entry pillars and, later, closed with suitable stoppings, so that the air current will be made to pass through the last cut-through next to the working face.

**QUESTION**—A siphon pipe is 4 in. in diameter and 1,000 ft. long, with a rise of 15 ft. and a fall of 23 ft. How many gallons of water will be discharged in 24 hr.?

**ANSWER**—Without knowing the separate lengths of the suction and discharge ends of this pipe line, it is not possible to determine if the siphon will work satisfactorily. In order to obtain the best results in siphon drainage, the diameters of the two respective parts of the siphon must be proportioned to their respective lengths and the effective head in each. However, in a general way, the flow in this pipe may be estimated from the total effective head and length, according to the following formula:

$$G = d^2 \sqrt{\frac{800d(h_2 - h_1)}{l}}$$

$$= 4^2 \sqrt{\frac{800 \times 4(23 - 15)}{1,000}}$$

$$= 16 \sqrt{0.8 \times 4 \times 8} = 16 \sqrt{25.6}$$

$$= \text{say } 81 \text{ gal. per min.}$$

On this basis, the total flow in a 24-hr. day would therefore be  $81 \times 60 \times 24 = 116,640$  gal.

**QUESTION**—The inlet air current of a mine has a temperature of 60 deg., and at the outlet the temperature is 65 deg., barometer 30 in. What is the difference in weight of 100 cu.ft. of air between the inlet and outlet?

**ANSWER**—The weight of a cubic foot of air at a temperature of 60 deg. F, bar. 30 in. is

$$w = \frac{1.3273 \times 30}{460 + 60} = 0.076575 \text{ lb.}$$

Likewise, the weight of a cubic foot of air at a temperature of 65 deg. and the same barometer, is

$$w = \frac{1.3273 \times 32}{460 + 65} = 0.075845 \text{ lb.}$$

Then, for 100 cu.ft. the difference in weight would be  $100 (0.076575 - 0.075845) = 100 \times 0.00073 = 0.073 \text{ lb.}$



# President Harding "Invites" Operators to Return to Mine Properties and Resume Operations

BY PAUL WOOTON

Washington Correspondent of Coal Age

LATE Monday night the chief topic of speculation among coal operators was the meaning of the President's invitation to the operators "to return to your mine properties and resume operations." In the opinion of some this was taken to mean that the President intends that the production of coal must be resumed at once and the means is left to the operators to work out, but whether with a guarantee of protection is not clear.

While the President expressed disappointment at the lack of unanimity, the point was emphasized in a White House statement that all operators had subscribed broadly to the proposal to arbitrate. The separate replies of the different groups of operators appear elsewhere in this issue. The statement on which all agreed was presented in the form of a letter from Mr. Ogle to the President. It follows:

"We have given most careful and thorough consideration to the proposal submitted by you on July 10, supplemented by your statement of July 15, and we are not only in entire accord with your plan to establish a general tribunal to inquire into all the facts in our industry and make recommendations for the solution of our fundamental problems but we urge that such a plan be put into effect by you.

"We also wish to remind you that we have already proposed the broad principle of arbitration in our previous conferences with the officials of the administration and with the representatives of the miners. We still stand on that broad principle and are in entire accord with you in that respect. We did have in mind, however, discussing with you certain recommendations as to the machinery to make an arbitration plan effective and to accomplish the results which the country and you yourself desire.

"In view of the contingencies that confront us and the varying conditions in the different coal-producing districts of the country, our conference has decided to answer your proposal by districts, rather than as a whole, and we attach hereto statements of the position taken by the several districts represented in the conference of operators assembled at your request here in Washington.

"All of the operators of your conference unite in supporting the principle of arbitration and collective bargaining and your high motives in calling us together. And, finally, they say to you and to the American people that each and every one of them stands ready in this crisis to put his properties and his own services at your disposal and command at any instant."

When the President has received the several replies, he said:

"I have heard your decision. I would not be frank if I did not confess a disappointment in your lack of unanimity. To the large majority of you, who have pledged readiness to resume activities under the government proposal, I must express my own and the public's gratitude.

"We have now reached a point, owing to the refusal of mine workers and a minority of your operators to accept the proposed arbitration, where the good offices of the government in seeking a voluntary adjustment of the dispute between mine operators and mine workers are without avail.

"I cannot permit you to depart without reminding you that coal is a national necessity, the ample supply of which is essential likewise to common welfare and to interstate commerce.

"The freedom of action on the part of workmen and on the part of employers does not measure in importance with that of public welfare and national security. I, therefore, invite you to return to your mine properties and resume operations."

After the conference, the following statement was given out at the White House:

"At five o'clock this afternoon the coal operators made extended verbal and written reports to the President. All of them subscribed broadly to the proposal to arbitrate. The majority of the districts represented in the conference accepted the President's proposal unconditionally. A minority of the districts in the conference joined in subscribing to the general principles of arbitration and collective bargaining."

## Objectors to Anthracite Tax Must File Exceptions and Furnish Bond

SAMUEL S. LEWIS, Auditor General of Pennsylvania, has notified all coal companies that have not made returns or paid the anthracite coal tax to the state, pending appeals of the constitutionality of the act of 1921, that they must file specifications of objection to the sum determined to be due and furnish bond in double the amount of the tax contested and make cost provisions for the collection. The tax in question is on production for the last half of 1921, and more than \$3,100,000 is due for that period, according to the records of the Auditor General's department.

After the State Supreme Court had declared the act constitutional the Auditor General informed the companies which had taken appeals from the decision of the Dauphin County court that he expected notice whether the appeals were to be withdrawn or further contested in the United States courts because of the interstate complications arising from the imposition of the tax. Operators and companies not paying pending the determination of the constitutionality of the anthracite tax were told that they must pay promptly or incur the penalties provided for the non-payment of any state tax within the time limit.

In a statement by Auditor General Lewis it is shown that 161 operators have settled their tax so far. He said: "Reports have been filed by 197 operators of the 385 collieries, washeries, or operations, and accounts have been settled against 161 operators at this date. Of the concerns

mentioned, eighty-five showed no production during the period referred to, or from July 1, 1921, to Dec. 31, 1921. The aggregate amount of taxes, as shown by reports of anthracite coal producers filed, is \$3,164,189.02, and accounts have been settled for \$2,256,778.11 of this amount, although only payments have actually been made in most cases."

## Coal Consumed by Public Utilities, 1919-1922

(In Thousands of Net Tons)				Ratio each monthly av. to Total Average	
	1919	1920	1921	Monthly Average Last 3 yrs.	1922
Jan.....	3,000	3,594	2,984	3,192	110.60
Feb.....	2,860	3,251	2,644	2,918	101.11
Mar.....	2,560	3,263	2,641	2,821	97.79
Apr.....	2,520	2,923	2,417	2,620	90.79
May.....	2,560	2,832	2,415	2,602	90.16
June.....	2,650	2,858	2,434	2,647	91.72
July.....	2,730	2,945	2,454	2,709	93.87
Aug.....	2,860	3,010	2,573	2,814	97.54
Sept.....	3,000	3,013	2,586	2,866	99.31
Oct.....	3,180	3,169	2,759	3,036	105.20
Nov.....	3,480	3,167	2,779	3,142	108.87
Dec.....	3,700	3,198	2,893	3,264	112.75
Total...	35,100	37,223	31,579	2,886	

MEMBERS OF THE MINE INSPECTORS' INSTITUTE of the United States, in convention at Chicago, July 11-13, missed the friendly and helpful presence of James T. Beard and re-elected him editor in chief of the Institute's proceedings.

## Acrimonious Conferences of Operators Fail to Agree Unanimously to Harding Arbitration Plan

**A**FTER a series of conferences, described as having been the most acrimonious in the history of operators' meetings, the representatives of the various bituminous-coal producers' associations in unionized territory failed on Monday, July 17, to agree unanimously on the acceptance of the President's arbitration plan. A majority report, drafted by a committee headed by H. N. Taylor, was signed by all but three of the associations. This report accepted the President's proposal "without reservation or qualification." The three associations which submitted dissenting replies were the Pittsburgh Coal Producers' Association, the Indiana operators and the Central Coal Association of Pennsylvania. The text of the majority report is as follows:

"We have approached the earnest consideration of your proposal of July 10, 1922, for arbitration in the coal situation, with that degree of solemn earnestness that is due a subject that is so fraught with grave and far-reaching consequences to the whole American people that no private interests of ours can weigh in our considerations.

### ACCEPT PROPOSAL WITHOUT RESERVATION

"Therefore, on behalf of the bituminous-coal operators who have been in conference with you and who represent associations producing in 1921 somewhere near 90 per cent of the bituminous coal, which was covered by collective bargaining with the United Mine Workers of America, we beg to state that we accept your proposal of July 10 without reservation and qualification. While making this unreserved acceptance we think that it is due to the public and to the industry that we should point out not only some suggestions which we believe would be helpful in the consummation of so great an undertaking but also some of our difficulties in acceptance.

"Inasmuch as the old machinery for making scales based on the Central Competitive Field has broken down, proven entirely inadequate to meet the changed economic conditions of the country, and is therefore now irretrievably abandoned, and inasmuch as the great varied technical and economic situation of the various districts makes it almost impossible for a national arbitration board to satisfy these differing situations, and inasmuch as the operators here assembled are anxious to maintain the principle of collective bargaining, we suggest that it should be made possible under a national arbitration board for negotiations to be undertaken by states or other large groupings of districts, subject to the general direction of the arbitration commission of the major issues involved. This is in the mutual interests of both operators and workers, because of the many technicalities and varied economic conditions differing in the various sections of the country.

### RECENT WAGE SCALES ABOVE COUNTRY'S AVERAGE

"The wage scales expiring March 31, 1922, in the unionized industry based upon an inside day wage of \$7.50 per day for mine labor, are far above the wage levels of the country. They are far above our competitors in the non-union fields. They impose a burden on the consuming public and the whole of industry. They affect the freight rates, the costs of manufacturers, the interests of our farmers and our work people in every direction. We have no doubt that in your proposal that the miners should return to work upon this scale even temporarily, you had in mind the more essential question of immediate return to production, in order that industry should not be paralyzed, that the proper wage levels to be determined would not thus be prejudiced, and that we and the public at large could afford to make this sacrifice in your effort to secure the return of the men to work, even though it did lean entirely to the side of the miners rather than to that of equity and general public interest.

"We had thought that the scale of November, 1917, based upon \$5 per day for common labor, would furnish a

better medial line between the contentions of the two parties. The largest part of the non-union coal production of the country at the present moment is carried on below this level.

"We welcome an exhaustive inquiry into the functioning of the industry, as we believe any exposure of the truth of the situation will show the intolerable and wasteful conditions under which the unionized industry is carried on under the present labor régime, and the penalties that are imposed upon the public by the inability to secure the enforcement of contracts and the thousand other ills. We suggest that it would be desirable to separate the problems of anthracite and bituminous coal. We see no objection to separating again the investigation problems from those of arbitration of the present disputes into different commissions, pending the development of some plan of stability.

"H. N. Taylor, Chairman;  
"Michael Gallagher,  
"R. M. Davis,  
"Rice Miller,  
"E. C. Smith,  
"P. J. Quealy."

In addition the statement was signed by the following associations: Pittsburgh Vein Operators' Association of Ohio, Cambridge District, Fifth and Ninth District Coal Operators' Association of Illinois, Jackson (Ohio) District, Illinois Coal Operators' Association, Central Illinois Coal Operators' Association, Iowa Coal Operators' Association, Southwestern Coal Operators' Association (Missouri, Kansas, Arkansas and Oklahoma), Oklahoma Coal Operators' Association, Bergholz-Amsterdam District of Ohio, Montana Coal Operators' Association, Southern Wyoming Coal Operators' Association, Central, North, Massillon and Coshocton Districts of Ohio; New York coal companies' interests in southern Ohio and Crooksville districts and some thirty individuals in various Eastern fields.

Washington, July 15.—That federal intervention in the coal strike was a great mistake is becoming increasingly evident, according to a widely held opinion in Washington. It is conceded, however, that since such a policy has been initiated there now can be no turning back. As a result of what is regarded by many as its ill-timed interference, the administration now is confronted with a self-created task almost comparable in intricacy and dangerous possibilities with the Irish problem. The step having been taken, however, it is believed it would be nothing short of a public calamity were some basis of arbitration not worked out. As a consequence, it is believed that some means will be found for reaching an adjustment for the present coal year. Each side to the controversy, however, fully expects to see the government take over certain mines and operate them in the interest of those localities threatened with a shortage of fuel.

An analysis of the so-called miners' refusal of the President's proposition reveals that it is not a rejection of the arbitration proposal at all. The position of the policy committee of the United Mine Workers simply is to withhold their acceptance of the arbitration proposal.

While it is believed that some form of arbitration is going to be brought about, no one sees how any decision can be reached that will be equitable or that can result in anything more than a truce. Arbitration, especially in view of the President's explanatory letter, can mean little more than a Central Competitive Field agreement. More than 300,000,000 tons of annual output were not represented at the final meeting of operators when the deadlock was reported to the President. There is no way whereby the federal government can force the non-union operators to fix wage scales. It is quite apparent that operators in the Kanawha field or even in a smaller subdivision, such as the Windber region in Somerset County, Pennsylvania, are



not going to throw away large investments made in efforts to stay non-union, even if the majority of their workers have affiliated with the labor organization.

As the strike enters its sixteenth week it is evident that various events have strengthened the union position. Principal among these is the success which has attended the efforts of the railroad shop crafts to interfere with transportation. That there is joint action between the striking miners and the striking shopmen cannot be doubted. Efforts have been concentrated on the weak spots of the coal distribution system. The movement of coal has been seriously interfered with at junction points on the Louisville & Nashville and on the Chesapeake & Ohio. The L. & N. was recognized as a weak spot and the success which attended the efforts to hamper coal movement on that line did not occasion great surprise, but when the better situated Norfolk & Western and the C. & O. were involved in serious difficulties before the shopmen's strike was two weeks old, it became apparent that the railroad strike is going to be a major factor in the coal strike. Students of the situation are at a loss to understand why the administration did not use its influence with the Railroad Labor Board to prevent the thrusting of a second crisis on the government. At the very least the railroad strike is resulting in a loss of 2,000,000 tons of coal supply just at the time that it was most needed.

**LETTER FROM J. G. BRADLEY, president, Elk River Coal & Lumber Co., Dunton, W. Va., and former president of the National Coal Association, to Secretary Hoover, dated July 10, 1922:**

Dear Mr. Hoover: I came down from Harrisburg at Mr. Ogle's request to discuss the coal-price situation and feel it is my duty to tell you what I told him.

You are familiar with the natural difficulties in the way of keeping the price of any commodity down when the demand is in excess of the supply. The fact that you have been successful in keeping the price of coal from running away up to this time is, I believe, largely due to the fact that the production has been steadily increasing, so that the consumers have been led to expect that it would shortly equal the demand and have therefore refrained from struggling against each other to secure the current production. The public is now, however, aware that not only has the increase been stopped but that the rate of production has actually been diminished. The causes for this are immaterial so far as the consumers are concerned. We therefore see now the first stages of a buyers' panic and I am of the opinion that no effort of ours will avail to continue to control the market price if the panic prevails.

It is not necessary for me to point out to you the causes leading to such a panic condition. First there is the fact that production since the first of April has not been sufficient to protect the consumers' stocks. If outside forces had not been brought to bear the rate of current production by this time perhaps might have been accelerated so as to maintain the consumers' confidence, but the railroad strike has so interfered with the movement of coal as to cut down production and so lead the public to believe that its fuel supply, which was already precarious, might be cut off.

The increase in coal production some time ago reached the maximum possible from the non-union districts and has lately been coming from districts in which the union had previously been in control. The increase from these districts was very satisfactory and a study of the Geological Survey reports would indicate that if nothing happened to give it a setback demand and supply might have been again equalized in September, but when it became understood that the efforts of the government would be directed toward assisting the miners to make a blanket settlement rather than toward the protection of those who are willing to go to work at current wages, this movement in the same organized fields was brought to a stop. There is the story. The all-important thing to reduce the market price of coal is production, commensurate with the demand. The only thing necessary to secure such production is protection to the man who is willing to mine coal at the market wage.

I have read the President's statement which appeared in to-night's papers with much interest. I think he cannot have realized that to put the union field back to work at the 1920 scale under present conditions means that wages in the non-union fields, which are now producing two-thirds of the country's normal consumption, will have to be raised to approximately the same level for those fields to hold their supply of labor and that the effect of his suggestion, if carried out, is therefore to increase the labor cost of mining all bituminous coal about 30 per cent above the present cost, which in the case of the non-union operation, where wages have been reduced in the general economic adjustment which has been taking place during the past year, would be an increase of about 42 per cent. This in itself would, of course, upset the basis upon which you established fair prices.

I can hardly believe that it is the President's intention by executive action to grant a special privileged wage to mine labor, but such would be the effect of his plan, thus putting an added burden on American industry and on every American householder.

The text of the reply of the Pittsburgh Coal Producers' Association, dated July 17, is as follows:

Mr. President: Your proposal for the settlement of the present bituminous-coal strike has been given most thorough and respectful analysis and consideration by the operators of the Pittsburgh Coal Producers' Association. We fully appreciate the propriety of your interest, as the representative of the American people, in the unfortunate strike now pending in the bituminous-coal industry, and we beg to say that we are not unmindful of the responsibility which your proposal has placed upon us, not only as coal operators but as American citizens.

We regret to say that we regard your proposition as one that will merely for the moment tide over a crisis, to the ultimate injury not only of the industry, miners and operators alike, but also to the country.

Your proposition requests that we consent to arbitrate a basic wage scale for the union mines of the United States by a national commission. We will treat it first from the economic standpoint. We assume that you know that the non-union mines of the country, which are not, and we believe should not be, involved in your proposal, are now producing two-thirds of the present economic demands of our people for coal, and are able in peak times to produce perhaps 50 per cent of the nation's demands. It would, therefore, be the function of your commission to fix a basic wage and working conditions for perhaps 50 per cent of the coal production of the country, while the other 50 per cent would have the privilege, from time to time, of establishing for itself such wage scales and working conditions as might be arranged between employer and employee to meet changed economic conditions. This means that the union operator is tied to fixed standards, while the non-union operator may at any time deal with his men as best suits the immediate advantage of both. The result inevitably will be that in the non-union branch of the industry the wage scale will vary to give the non-union operator the business and the non-union miner the work while the union operator and union miner will take largely the business that is left. Your plan cannot operate otherwise.

The Bituminous Wage Commission appointed by President Wilson, which had larger scope due to the war powers of the President, fixed a wage that had that effect, and many operators in the Pittsburgh district were compelled to close their mines or operate at a loss for the last year under it. We cannot conceive how we can operate our properties on a basic wage fixed by a commission which covers only approximately one-half of the coal industry. We cannot deliberately jeopardize our properties and business interests by acceptance. Some other solution must be found.

You propose to put the mines back to work at the wages which were paid under the scale which expired March 31, 1922. These were the highest wages ever paid in the industry. Under this scale basic day labor received \$7.50 per day of eight hours. These wages were fixed at the peak of war wages and conditions, and have been already liquidated in the non-union fields of the industry. If this wage is to be but a temporary one, what operator or dealer in the Great Lakes trade would care to take the chances of getting back the higher cost of his coal in the face of an assured reduction in the immediate future?

Is this proposition from the government fair to the non-union operator who has already liquidated his wages and who in many fields has worked his mines under the hardship of unlawful aggression by the United Mine Workers of America? Can he hope to keep his mines at work on the wage scales now being paid if the union miners are to receive these war-time wages? How can it result otherwise than to cause dissatisfaction among his employees? He will be compelled to submit to unionization or, for the immediate future at least, meet the wages proposed by you. If he can escape unionization by paying such wages it will mean that the public over the whole United States will have to pay war time prices for coal as long as such wages are in effect. The American people cannot afford to suffer this arbitrary organization to dominate its fuel supply. If it were not for these non-union fields the entire country would now be under its autocratic, arbitrary and ruthless domination. Today only these fields protect the American public from great privation for want of fuel. The right of an employer to enjoy his constitutional rights and keep aloof from this organization must not be denied. This proposition is vital to the preservation of American liberties and we should not be parties to compromising it.

Your proposal further provides that for the present we must pursue, and for the future either arbitrate or waive our objections to, the so-called check-off practice; we speak of it in its broadest sense. As you know, its legality has been seriously questioned in judicial proceedings, and we believe, regardless of legality, that the economic results of the institution are so unquestionably vicious and un-American that it must be eliminated. The check-off practice in the coal industry means more than the mere collection by the operator for the union of initiation fees, dues and assessments of the members; it means that no miner can work in a union district and pursue his vocation of coal mining unless he joins the United Mine Workers of America and agrees to subject himself to their arbitrary dictation, not only as to wages and working conditions but as to all their strike orders and commands in all matters pertaining to the affairs of the union as administered.

Under this practice the operators are compelled by the United Mine Workers of America to collect for it many millions of dollars annually, which vast sums, as already found and proven in many judicial records in the courts of the country, are then used by this autocratic organization to pursue their objects by force. The union operators have already been charged with being parties to the unlawful practices of this organization because of their participation in this check-off system, and the operators of the Pittsburgh Coal Producers' Association refuse longer voluntarily to pursue it. They do not care longer to be so charged.

In 1920, before the Wilson arbitration board, we earnestly asked for the elimination of the practice. That tribunal failed either to condemn or eliminate it. Your proposal asks us again to submit this practice to arbitration; this we cannot do. As we would voluntarily be submitting this matter to a commission we have serious doubts as to whether we could be protected in the courts in pursuing it if your proposed board neglected or refused to eliminate it.

We come now to a consideration of the doubtful legality of making a basic wage scale for the union mines of the United



States with the check-off feature. We express no opinion as to the matter.

It is pertinent, however, to observe that in this overdeveloped industry all mines of the country, generally speaking, are engaged in sharp competition in interstate commerce. The mines in each district compete in the same market, and the districts, union and non-union, some with one, some with another, are in close competition.

The wage scale very largely determines the price of coal and it has been inferred in the past that a basic wage has been fixed by operators and miners to impose a basic price on the American people, and that the check-off furnishes the funds to accomplish it.

The present Attorney General, in referring to trade associations, has also said that the arbitrary fixing of the principle elements entering into the price of commodities would be violative of the law. Is the fixing of a basic wage different from other elements?

Is it not pertinent for us to inquire why a basic wage for the mine workers should be fixed for the whole United States just because they demand it, especially as the mining of coal is primarily a state function? We see no economic necessity or economic good either to ourselves or to the country in such procedure. We cannot even see why it is to the advantage of the individual miner. It will have the certain effect in many districts of taking away from him his work. The truth of the matter is that it is only the miners' leaders who want a basic wage for the United States. Their purpose, as set forth in their constitution, is to unionize North America. They desire to completely nationalize the coal industry. If they can gather together in joint conference or in a national arbitration this great industry and fix the wages and working conditions for the miners of North America they will have the economic power, as they believe, to accomplish their purpose.

We cannot forget that even if we would consent to your proposal, that we are still, in the eyes of the law, free agents and doubt our ability to evade the legal effect of our putting into practice any arrangement made by a voluntary commission. The very purpose itself to fix a basic mine wage for the United States would seem to us objectionable as being contrary to public policy. Without hazarding a legal view on a subject so complex, we feel that such a procedure comes gravely close to an arbitrary and man-made interference with the free flow of coal in interstate commerce.

We appreciate that you make your proposal in the interest of compromise and peace, and to provide coal for the country, but we do not think that we should participate in an arrangement that in our opinion will not be helpful to the industry or inure to the public welfare. We also fully realize that you cannot personally have an intimate knowledge of the problems of this industry, and that you must be guided by the opinions of others, and for that reason we have thought you would desire us to speak our minds plainly in the matter.

We, as you, earnestly desire a proper solution of this unfortunate controversy. We are not unmindful of the fact that we are trustees for the American people in our industry, and being of the opinion that your proposal is not the best solution of the controversy we respectfully decline it as made.

We however agree with the principle of arbitration in matters of this kind, and, therefore, propose the following:

(1) That the principle of district settlements be recognized by the United Mine Workers of America.

(2) That the mine workers at mines in the Pittsburgh district now on strike return to work immediately on the wage scale in effect in November, 1917, without the check-off. This scale to be effective until March 31, 1923, or such earlier date as the board of arbitration hereinafter referred to may be able to fix a wage for the district, provided, however, that this arrangement shall not apply to the mine or mines of any operator who refuses to participate.

(3) That the President of the United States shall, as soon as conveniently may be, appoint a board of arbitration for the Pittsburgh district consisting of three members, said arbitrators to be residents of the Pittsburgh district, none of whom shall be miners or operators or in any way connected with the bituminous coal industry. The finding of a majority of said board shall be final and binding upon both operators and miners. It shall be the function of this board to immediately commence the study of conditions affecting the district, and to fix as promptly as possible a proper wage scale for the district, said report to be made not later than April 1, 1923.

(4) The check-off practice to be eliminated.

(5) The competitive relations in and about our district and with competing non-union and union districts and operations to be the determining factors in arriving at any wage scale.

We have no objection to your proposal to create a national commission to investigate the coal industry in all its phases and to make report thereon, but insist that the organization, history, aims, purpose and conduct of the United Mine Workers' organization be not overlooked in the investigation.

In case this plan is not accepted by the miners' organization, the operators of the Pittsburgh Coal Producers' Association, relying upon the President's enunciation of the doctrine of individual liberty in his address at Marion July 4, that "liberty is gone in America when a man is denied by anybody the right to work and live by that work. It does not matter who denies. A free American has the right to labor without any other's leave," and again, that the government "will force no man to employ men against the free exercise of an employers' rights," will then undertake to exercise their constitutional right to operate their properties and supply the public with coal. They will demand that they and their employees be protected in their right, in the hope that the right will be vindicated, not by words, but by the protective arm of Government.

We further offer if the governmental authorities so desire, to enter into immediate negotiations providing for governmental operation of our mines in order that the public be supplied with coal.

#### CENTRAL COAL ASSOCIATION OF PENNSYLVANIA BALKS

The text of the reply of the Central Coal Association of Pennsylvania, also dated July 17, is as follows:

Dear Mr. President: The Central Coal Association of Pennsylvania has a full realization of the solemn obligation placed upon it to concur in any plan which promises a speedy and peaceful settlement of the present strike. When such a plan is offered

by the President of the United States it becomes in effect a command of the American people.

The only possible justification for a refusal to accept unquestioningly the President's decision is a sincere and well-founded conviction that such a proposal embodies features that imperil the general welfare and constitute a menace to other industries than our own.

The mere fact that such a plan may work an irreparable injury among hundreds of thousands of individuals whose savings are invested in mining enterprises is serious but not sufficient in itself to warrant a refusal to accept its provisions. In fact it is insignificant in comparison with principles of public interest and citizenship which are involved.

With these principles in mind the operators have made a sober and careful analysis of the President's plan. They must refuse to accept it and their reasons are as follows:

(1) The wage rates offered by the President to union miners in the provisional scale are those exacted and paid in 1920 when the peak demand and peak prices for commodities prevailed. The wage rates already accepted by non-union miners who, up until this week, had continued to produce one-half of the country's requirements, are approximately 30 per cent lower than those proposed by the President and equal, nevertheless, to the highest war time wages paid in 1918 and 1919.

The inevitable consequence of our acceptance of this provisional scale is to cause an immediate reflation of the cost of mining and the price of coal in the districts which had already made the post-war adjustment and continued to serve the country's fuel needs on a reasonable basis.

An acceptance on our part of this provisional scale would constitute a betrayal of the operators and of the mine workers who had already borne their share of the economic burden which we have understood from the President's previous and often repeated statements was expected of every industrial group in the country.

As to the increased cost of coal to the consumer, we have nothing to say. The government having intervened, the public's interests are in its hands. We do, however, protest most vigorously against the unfair weapon now placed in the hands of a small group of labor leaders with which to destroy the work of readjustment already peacefully effected by mutual agreement in one-half of our industry.

(2) The President's plan embodies a provisional scale for the resumption of work on basic wage rates and working conditions which grant to the miners practically every exorbitant demand which they have made, and for which they have contended without regard either for economic law, or for the laws of this country enacted to protect life, to preserve order and to guarantee the right of individuals to offer or to obtain employment by free bargaining, either singly or collectively.

Our acceptance of this proposal would establish and vindicate the doctrine of the radical element in organized labor that force wins victory.

As to the President's plan of arbitration, we are thoroughly in accord with it in principle as evidenced by our last resolution in conference, which was rejected by the mine workers. We protest, however, that the true principle of arbitration is perverted in the President's plan on the following grounds:

(1) The operators are asked to surrender unconditionally their fundamental principle of district wage agreements before appearing before this commission. No recognition of regional necessities is granted during the provisional term which might, and no doubt would, be extended until March, 1923.

(2) We protest against the recognition made by the President's plan of the compulsory collection of union dues from the pay envelopes of all their employees under the iniquitous "check-off" system. By this means an enormous war chest has been automatically financed for the United Mine Workers. The funds thus exacted from every union miner have provided the means for conducting armed warfare, for financing a host of newspapers, pamphlets and lecturers which have attacked the administration of the United States, attempted to nullify the authority of the supreme and federal courts, to foster class hatred, to condemn and discredit the orderly forces of society.

We are compelled to waive our two fundamental contentions before the appointment of a commission and the remainder of our case which might be brought before the commission is of comparatively little moment to us, or to those we represent and cannot, in our opinion, be called arbitration in any true sense of the word.

We will promptly and willingly submit to any neutral commission of representative citizens not connected with the production of coal the full and detailed reasons for our unalterable stand upon district agreements and the abolition of the "check-off" system. And with these issues we will also arbitrate any and all other phases or features of our business.

Pending the appointment of a neutral commission and in order to meet the imperative demand for a prompt resumption of mining, we respectfully suggest that the President should amend his proposal for a provisional wage agreement as follows:

"Mine workers are to return to work on the scale of wages which expired last March 31st, adjusted to conform with the changes in the cost of living between August 15th, 1920, when this scale became operative, and this date. This adjustment to be determined from the cost of living under index figures of the Department of Labor."

We believe that the future of America as a manufacturing nation, and even as a democratic society depends upon the successful issue of our contentions.

It is with a full knowledge of its gravity that we have reached our decision and we respectfully call the President's attention to the perils involved in a compromise of principle to gain expediency at this critical juncture.

#### TO TAKE COURSE THAT SERVES INDUSTRY AND COUNTRY

The text of the reply of Indiana operators, under date of July 17, is as follows:

My dear Mr. President: The Indiana operators wish to assure you that we are determined to pursue the course which in our judgment serves our industry and country best. We have been among the first to respond to the President's suggestion that a general fact investigating tribunal should be established to fully develop all facts and conditions within the industry and make recommendations for the solution of its fundamental problems.

We have always in times past and have again in this emergency, proposed unlimited and unrestrained arbitration and are in



entire accord with the President on this basic principle. We are, however, regretfully obliged to advise you that we cannot accept your proposal of July 10, supplemented by your statement of July 15, for two reasons:

(1) Repeated experiences in the coal industry have shown that arbitration by boards composed even in part by partisan members, is entirely impracticable and ineffective and in the past such boards have tended only to lead us into greater difficulties.

(2) As shown in the requests of the parties affected, for interpretations of your proposal, there is evidence of doubt on some of the salient features and consequently there will be room for much misunderstanding and confusion.

We wish to advise you, however, that we now pledge ourselves to engage unreservedly to abide by every decision and order of a board of arbitration appointed by you which does not include in its membership either miners or operators.

## President Harding Interprets His Statement of July 10

To A. M. Ogle, president of the National Coal Association;

To S. D. Warriner, president of the Anthracite Coal Association, and

To John L. Lewis, president of the United Mine Workers of America:

Since I tendered to you in a joint session at the Executive Offices on Monday, July 10, certain proposals for the arbitration of the coal dispute and since there have been numerous inquiries and several informal conferences in the intervening time, aimed at clearer understanding, I have thought it desirable to place before you, in writing, such interpretation on the general proposal as I have sought informally and in verbal statements to convey. These definite interpretations do not in any way modify the original proposal, but will serve to clarify such doubts of construction as have been expressed and leave no possibility of misunderstanding.

The program contemplates three successive stages, as follows:

First—That the mine workers return to work under the same terms and conditions as those which governed each case on last March 31. This includes the check-off.

Second—It is the intent that the temporary arrangement above shall remain in force only during the shortest period that may be required for a determination of terms and conditions of labor for the period

ending March 1, 1923. I have emphasized this by suggesting that the wage scale shall be determined by Aug. 10, 1922, with authority in the commission to extend that period by such number of days as may be required. Its earliest determination is very necessary in order that contracts and estimates involved in business transaction may become settled, and it is understood that all questions of dispute as to conditions of labor or any other points of friction between operators and employees, who are parties to this arrangement, shall be determined by the commission, and such settlement shall hold until March 1, 1923. These decisions may also require more time than until Aug. 10, and therefore the commission is to have authority to extend time for settlement of each or any of these questions as it finds to be necessary.

Third—That the commission in recommending an establishment for maintenance of industrial peace in the coal industry will be expected to bring in such recommendations in time to allow for their use in the settlement of relations after March 1, 1923. They are to be recommendatory and not binding.

The President will ask of Congress as soon as the House is reconvened in August for a grant to the commission of the necessary legal powers to make an exhaustive inquiry into the coal industry in order to acquire the needed information upon which

to formulate plans to avoid future suspension of production.

In order to clarify what shall constitute a commitment to the plan I have proposed, let it be understood that, as to the bituminous fields, the basis of agreement in national disputes has hitherto been agreements between the United Mine Workers with operators in the Central Competitive Field. Therefore, the acceptance of this offer by the United Mine Workers and by the operators shall be deemed complete and binding when the United Mine Workers and the operators, parties to the Central Competitive Field agreement which expired on March 31, have accepted it. The other bituminous mines which are now idle because of strike or suspended operation are expected to adhere to the plan and comply with the decisions of the commission, but their action in no way affects the validity of the agreement to the plan.

In the anthracite fields the acceptance of this offer by the United Mine Workers on one side and the Anthracite Operators' Association on the other shall render it effective. If the mine workers and operators agree, there shall be a separate commission.

It is understood that all decisions by the commission must be reached by a majority vote thereof, and all decisions shall be binding to all parties to the agreement until March 1, 1923.

## Mine Workers' Reply Withholds Acceptance of Arbitration Plan

The policy committee of the United Mine Workers of America met at the Red Cross Building to adopt an answer to President Harding's arbitration proposal. Members of the anthracite scale committee held a separate meeting earlier in the day and decided to reject the proposition. These members also sat in the policy committee meeting and participated in the general consideration of the subject.

By unanimous vote the policy committee rejected the proposal of the President, and a letter signed by the International officials and all of the district presidents of the United Mine Workers of America was prepared and delivered to President Harding at the White House. The letter sets forth the reasons for rejection of the arbitration proposal and is as follows:

Dear Mr. President: We are in full accord with your proposal for the establishment of a commission which, as you state, "shall investigate exhaustively every phase of the coal industry. It shall reveal every cost of production and transportation. The President will ask Congress to confer authority for the most thorough investigation and make appropriations necessary to do such work."

The fundamental interests of the mine workers and of the consumers of coal are dependent upon such action being taken. It is also essential to the proper development and stabilization of the coal industry itself.

During the past two years it has been very apparent to the mine workers that such an investigation as you now propose should be inaugurated, and we have, on every proper occasion, recommended that this be done. When at the beginning of the existing controversy our representatives were called upon to testify before the Committee on Labor of the House of Representatives, we formally urged the creation of such a commission and submitted detailed suggestions as to its composition and powers. We are, therefore, indeed, gratified to accept your proposal for a comprehensive investigation of the coal mining industry by a commission representative of

the mine workers, the operators and the public, and to assure you that it shall have our most hearty co-operation and support.

The actual completion of the work of such a commission and the application of practical reforms, however, is an essential preliminary and a necessary prerequisite to any attempt to determine rates of pay to workers in the coal mining industry upon a just and reasonable basis.

Labor is only one factor in the production and distribution of coal. Labor costs are only one element in the many elements of costs involving the mining of coal and its transportation. All of these factors and elements are closely interrelated and interdependent. One factor, such as labor, cannot be segregated and a decision made upon it alone. Among other things, the relation of labor and other costs to profits and prices must be associated. Inquiry must also be made as to the degree of regularity of operation of the mines and the opportunity afforded to the mine worker under prescribed rates of pay, to earn an adequate income for himself and his family.

By way of concrete illustration, it is stated on the basis of the facts available that the bituminous coal industry functions irregularly and intermittently because of overexpansion and unfair competition. Employees under existing rates of pay are unable to secure sufficient employment to earn living wages, while the public is compelled to bear excessive overhead charges amounting to approximately \$1 per ton on each ton of soft coal produced. Manifestly it is futile to attempt to adjust wage rates on an equitable basis until the truth of this condition of affairs has been thoroughly uncovered and the cause of it finally removed.

On the other hand, in the anthracite branch of the industry where wage rates are lower than in the bituminous mines, but employment more regular, it is known on the basis of available facts that a monopoly exists under which excessive profits are obtained from coal producing and coal sales companies and from excessive freight rates charged by the anthracite railroad corporations, which are the head of the combination. With the anthracite coal operators alleging a labor cost of \$3.92 per ton for their production, it is manifestly unfair practice for them to charge the ultimate consumer in the Atlantic seaboard market an additional \$12 per ton. It is, therefore, obvious in the anthracite field that indefensible monopoly profits are the significant factors in the determination of the price of anthracite coal to domestic consumers.

All the facts, in short, must be known

if justice is to be done to the anthracite mine workers and the public. Moreover, even after the facts are known, equitable results can not be secured until assurance is received that any constructive reforms, based on a study of the facts, are to be practically accepted and applied.

Abstract reasoning alone would clearly demonstrate the soundness of this conclusion, but aside from all abstract considerations, the actual history of the coal industry itself during the last two years amply confirms it. Two years ago, after a prolonged strike arising from the same fundamental causes as the existing strike, our rates of pay in the bituminous mines were fixed by a Presidential commission, with complete authority as to wages, prices and profits. In making its wage award this commission also made seventeen basic recommendations. Most of these recommendations were made with the knowledge that if carried out they would stabilize the industry and bring a degree of order out of chaos. The wage scale also was predicated upon the assumption that these recommendations would be heeded and adopted, but absolutely nothing has been done. On the contrary, the year 1921 was the most disorganized and irregular period that the soft coal industry has had for at least thirty years. Several months after the bituminous coal commission had rendered its report a decision as to wages and working conditions in the anthracite field was handed down by the anthracite coal commission, which had also been appointed by the President. Unlike the bituminous commission, however, the anthracite commission restricted its findings to wage matters only. The result was that wages were fixed below accepted standards as to healthful and decent living requirements, without regard to labor and other costs of production, monopoly profits and prices to consumers.

Both by reason and experience we are, therefore, convinced that the establishment of a fair wage in the coal industry is dependent upon regularity of operation, overdevelopment, costs of production, profits and prices.

When all the facts bearing when the production and distribution of coal have been collected and impartially analyzed, we shall gladly face these facts and accept them as a condition to the rehabilitation of the coal mining industry.

In any case, the combination of a scientific investigating commission with a wage arbitration board is bad. It is particularly bad when the wage scale at issue is a



matter of heated and bitter controversy. The primary duty of the commission, to be of real service, must be to collect the facts and give consideration to broad matters of peace and policy. These questions involve the reorganization of a huge industry, which in itself is a prodigious undertaking.

In the face of this tremendously important task, no wage questions should be injected.

We believe that there will be no difficulty in establishing proper wage scales through conferences with the operators if the industry itself was operating on a proper basis, and that therefore, if the commission is successful in establishing the proper basis for the future conduct of the industry, the fixing of detailed wage scales can properly be left to the usual conferences.

The mine workers desire to point out that the coal operators who have been in attendance at the recent conferences assembled by you, and to whom you have submitted the plan for arbitration of the coal strike, are only partially representative of the producing interests affected by the present suspension of mining. Operators representing nearly fifty per cent of the tonnage in strike fields where production is stopped have not been in attendance at such recent conferences and we have no information that the proposed plan of arbitration has been submitted to them by any governmental agency. We are further advised, through public and private information, that these interests have no intention of coming within the purview of the provisions of your plan of adjustment. Under such circumstances, it is futile to believe that any general settlement can be made. It is manifestly unfair to attempt to exact from the mine workers' representatives commitment to an arbitration plan while at the same time powerful operating interests, employing hundreds of thousands of men now on strike, are left free to follow their own selfish impulses and escape responsibility in the premises. We feel assured that your Excellency

transmitted this plan of settlement with the sincere hope that the present strike could be adjusted upon a basis of national scope. We find upon examination and analysis, however, that even the acceptance of the plan by the mine workers would bring about only a partial settlement, leaving the public to be embarrassed and industry further dislocated by a continuance of the strike situation in vast coal producing areas. The mine workers cannot, under these circumstances, lightly consider the utter abandonment of more than 200,000 of their members to the whims and caprices of hostile employing interests who are publicly committed to the policy of destruction of collective bargaining in the industry.

For these substantial reasons, the representatives of the United Mine Workers are compelled to withhold their acceptance of the arbitration proposal submitted by you.

The mine workers are alive to the necessity of immediate resumption of coal mining operations. Already coal stocks are so low that there is possibility of a serious coal shortage next fall and winter. Industry is now, and has been for some time, paying an excessive price for its fuel, and the public may expect further unwarranted price extortions before its coal requirements are fully met. There is every moral and economic reason for a termination of the present strike in the mining industry, and the mines should resume operation at the earliest possible date.

The development of this emergency has been constantly apparent to us since last April, and we have repeatedly warned the operators, the public and the Government of its approach. It would have been obviated if the bituminous operators had fulfilled their contractual obligations and met with us in the usual way to adjust wage scales and working conditions. The only effective way, at the present time, to escape the industrial and domestic catastrophe which these operators have thus made imminent is for them to measure up, even at this late date, to the requirements of honor and good faith by meeting with our representatives in interstate conference.

In the anthracite situation we again emphasize the offer previously made by our representatives that the anthracite coal operators recognize the principle of the eight-hour day for all men in the industry, with proper recognition of the union, and that the existing rates of pay be taken as a starting point for future joint negotiations, together with a discussion of the merit of the additional demands of the anthracite mine workers. Such consideration will so simplify matters that a basis of agreement may be easily reached.

The mine workers represent the human factor in the coal industry and human consideration should take precedence over all others. We respectfully submit, and feel confident that you will agree with us, that the mine workers should not be responsible for all the alleged ills and maladjustments of a diseased industry. For generations back our people have been the patient sufferers from all the adverse factors which have operated against them. We call to your attention that each year 2,500 of our men die and countless numbers suffer injury in order that society might be provided with fuel. The hazard of the calling should be given every consideration and our people should be compensated in accordance with their skill as artisans, the laboriousness of their toil, and the degree of personal danger which they encounter. For a period of fifteen weeks they have been deprived of their means of livelihood. They have suffered and have seen their wives and children suffer. Thousands have been evicted from their homes, and they have bravely endured every discomfort and personal sacrifice. They cannot now lightly forego the fruits of their struggle, and every dictate of humanity requires that they should be treated with that consideration due them. The public interest, as well as that of the mine workers, requires that their material wants be provided and their pride as citizens maintained.

We feel confident that this attitude will commend itself to your sense of right and justice and that it will be sanctioned by the reason and wisdom of all thoughtful men who love justice and humanity.

## Anthracite Operators Express Sympathy with Proposed Plan of Settlement

Dear Mr. President: On behalf of the anthracite operators, we beg to make the following reply to the proposal of arbitration which you submitted to us on July 10.

We are deeply appreciative of your effort to end the present suspension of anthracite production, and desire to co-operate with you to the fullest extent in this endeavor.

After continued conferences with the representatives of the mine workers from March 15 to June 2, it appears no agreement satisfactory to both sides could be reached.

The operators then proposed that the President of the United States be requested to appoint a commission or tribunal to ascertain and consider all the facts and determine the questions concerning wages and conditions of employment at issue between us; said commission or tribunal to find a practical method by which prompt operation of the mines may be resumed pending its ultimate decision, and also to seek and recommend a method by which future suspensions or strikes may, so far as possible, be avoided.

The anthracite operators further agreed that all such matters as the President might determine were pertinent to the questions in controversy concerning wages and conditions of employment should be considered by the commission or tribunal so to be appointed and agreed to abide by and faithfully carry out its decision or award.

We are, therefore, committed to arbitration, and are entirely in sympathy with the principle of the method of settlement which you have proposed.

We believe, however, that certain amplifications of your proposal are desirable to the end that the settlement shall be speedily reached, shall be permanent in character, and shall be binding upon both sides of the controversy.

Throughout the fruitless negotiations which have been held with the mine workers, the anthracite operators have had two primary objects in view:

First—An agreement on a wage scale which while adequate should at the same time afford the steady employment which the anthracite mine workers have enjoyed in the past and which only regular demand for the product can assure. It has been the firm conviction of the anthracite operators that this is economically possible only by such adjustment of these wages as would reduce the cost of producing anthra-

cite, in line with adjustments which have taken place with respect to other commodities.

Second—That any agreement reached should be durable and at the same time provide reasonable means of wage adjustment from time to time to meet the changing economic conditions of the country. The object sought was prevention of the periodical disturbance of the public and of industry generally by the recurring interruptions to production.

We feel confident of your desire to further these objects in a manner fair to all concerned.

In order that this may be accomplished, we respectfully make the following suggestions:

First—Because of the wide difference in the problems that confront the anthracite and the bituminous industries it is practically impossible for one commission to study and decide the questions in controversy within a reasonable period of time. Of necessity they must be studied separately if the prompt adjudication that all interests desire is to be obtained.

The anthracite business has no problem of overdevelopment and underemployment. It is already stabilized and has maintained full-time employment of the mine workers. Its mining conditions are entirely different from those in the bituminous field, and it is a manufacturing as well as a mining industry. Its product is mainly a domestic, not a manufacturing, fuel.

It has been consistently held not only by the operators but also by the mine workers that the anthracite industry with respect to agreements affecting wages and working conditions is and should be absolutely autonomous.

Because of these conditions, we feel that it is necessary for a separate commission to be designated by yourself to consider our problems, and we take the liberty of suggesting that such commission should be, so far as possible, non-partisan, not more than one member representing the operators and one the miners, and not less than three to be appointed by yourself as representatives of the public.

Second—The anthracite operators cannot escape the conviction that the re-establishment of the scale of wages in effect from April 1, 1920, to March 31, 1922, even as a temporary expedient, will embarrass rather than assist the efforts to restore normal conditions.

The demand from the public for de-

creased prices of anthracite is imperative. Anthracite is the only essential commodity which has not been deflated in price and the continuance of present prices will undoubtedly impede the distribution of the product, which should be prompt and uninterrupted on the resumption of mining.

We nevertheless agree to your proposal that, pending a permanent scale, the mine workers are to return to work on the scale of wages which expired last March.

It will be evident to you, however, that it will not be possible for the anthracite operators to contract for the disposition of their product while uncertain as to the costs of production. We are therefore confident that it is necessary to the success of your plan and in conformity with your intent that it shall be made mandatory upon the commission, first, to determine the wage scale, to be effective until March, 1923, and that its decision in this regard shall be handed down on or before Aug. 10.

Our agreements have always expired with the end of the coal year, March 31, and we suggest that this date be adopted for the expiration of the temporary wage scale.

Third—We respectfully submit that a recurrence of the present unfortunate situation will not be prevented by the establishment of only a temporary wage scale, expiring in March, 1923. A renewal of the present controversy at that time would be deplorable.

It is our understanding that the commission shall be empowered and directed not only to determine temporary wages and working conditions but shall also be empowered and directed to devise a method by which periodical disturbances may be avoided, and by which wages and working conditions may be automatically adjusted, by negotiation if possible, and if not, by such machinery as the commission shall set up; and that its decisions in this regard shall be binding on both parties.

We agree to abide without reservation or qualification by the findings of a commission so to be appointed and empowered.

It is our belief that these suggestions are within the intent and spirit of your general plan and that their adoption is necessary to bring about what you aim to achieve, namely, "the establishment and maintenance of industrial peace in the coal industry."

S. D. WARRINER,  
W. J. RICHARDS,  
W. L. CONNELL,  
W. W. INGLIS.



# Fifteenth Week of the Coal Strike

## EDITORIAL REVIEW

THE principal developments in the fifteenth week of the strike were the fruitless effort of the President to get the operators and miners together on a voluntary basis of settlement and the curtailment of production from non-union fields and from western Kentucky caused by the strike on the railroads. Opinion is divided as to whether the real crisis in the coal strike has been passed, with a majority feeling that it is yet to come. Much depends on the new stand the President takes, now that the situation created by his proposal of July 10 has been wiped off the slate. Beyond doubt the next week will see some turn in affairs that will point the way out.

### *Six Killed and Many Wounded in Attack On Non-Union Mine in West Virginia*

H. H. DUVAL, Sheriff of Brooke County, W. Va., and five other men, said to have been union coal miners, were killed Monday, July 17, at Cliftonville, W. Va., and more than two dozen men were wounded when an armed band of about 300 men made an attack on the tipple of the Richland Mining Co.'s Clifton mine. After a battle lasting an hour and a half, in which thousands of shots from revolvers and rifles were exchanged, the attackers were driven off and more than forty prisoners were captured and placed in the county jail.

### *Production in Connellsville Region Takes Rebound Following Holiday Slump*

WITH the passing of the July 4th holiday output in the Connellsville coke region is on the rebound. The H. C. Frick Coke Co. is gaining at practically all its operating mines, especially at the Trotter plant, which is working above 50 per cent of normal, most of the men working there being old men who have returned to work. The Hillman Coal & Coke Co. is gaining all along the line also, shipping two or three cars of coal a day from nearly all of its plants and a car a day of coke from Crystal plant. W. J. Rainey, Inc., the American Coke Corporation, the American Manganese Co. and the Connellsville Central Coke Co. continue to improve slightly. Other operating companies are holding their own or gaining.

Railroad coal shipments from the region are about 25 per cent higher than a week ago and coke shipments about the same. The Southwest branch of the Pennsylvania R.R. and the Monongahela R.R. handled more coal July 11 than at any time since the strike started. The former hauled 359 cars of coal that day and the latter 225 cars, and shipments on the 12th were probably larger. The condition of the Baltimore & Ohio R.R., due to the railroad strike, has somewhat hampered operators who are entirely dependent on that road for the disposition of their product. That condition, however, is improving.

### *Union Heads "Pass Up" Pittsburgh Parley; Operators Discuss District Settlement*

AN expected conference between Pennsylvania Commissioner of Labor Connelley, coal operators and heads of District No. 2 and District No. 5 of the United Mine Workers in Pittsburgh on Thursday, July 6, did not materialize, at least as far as the United Mine Workers were concerned. The meeting was attended by ten representatives of the Pittsburgh Coal Producers' Association, nine from the Bituminous Coal Operators of Central Pennsylvania and twelve from the Central Coal Association. None of the United Mine Workers heads attended. The meeting resolved itself into a discussion of the coal-strike situation with special reference to the feasibility and desirability of settlement of the strike by districts.

Mr. Rose for the Pittsburgh, Mr. Clark for the Clearfield

and Charles O'Neill for the Central, separately presented the following to Commissioner Connelley: "That it is to the interest of the operators, the miners and the public that a wage scale and working conditions be negotiated between operators and the miners in each district, and that the mining of coal is a state matter in accordance with a recent decision of Chief Justice Taft."

The operators also made it known that they are opposed to the check-off system as being unlawful in Pennsylvania and it is evident that they will not consider an agreement with the miners that would involve a continuance of the check-off.

The central Pennsylvania operators laid great stress on the fact that they had a contract with the U. M. W. of District No. 2, guaranteed by the officers of the national organization, providing that in the event of a new scale agreement not having been signed on or before March 31, 1922, the U. M. W. of District No. 2 would continue to work for thirty days under the wages and conditions of the agreement then in effect.

### *Middle West Ready to Go Back to Work; Price Level Is Subject of Speculation*

HARASSED beyond measure by the strike situation as it has been developing of late, the Midwest region sent its operators' representatives back to Washington Saturday to accede on Monday to President Harding's plan to resume coal-mining operations at once at last winter's wages. The operators of Illinois and part of Indiana met in Chicago Saturday forenoon and discussed the situation, deciding that it is necessary to line up with the President.

It will be with mixed feelings of relief and deep concern that the great mining region above the Ohio goes back to work at union wages—if it does. Most operators are anxious to produce coal with the market in its present state of high absorbency, but they are morally certain that if the President's commission works out a new and lower scale of wages there will be another strike—probably in the middle of the winter, when the country will need fuel more keenly than ever, thus giving the miners the buoyant feeling that they have the world by the tail. It is generally felt among operators that prices will remain high enough all winter to permit operation at a profit even with wages at the top notch.

One great question of the immediate future is: "What if operations are resumed; the railroads will be unable to haul enough coal to supply more than half the country's demand, with the result that most mines will get very little running time." This means, without doubt, that coal prices are going to stay in the clouds. A series of questions to operators on the probable price at which they will start their coal on the market elicits a few vague replies. Some set the figure for southern Illinois coal as low as \$3.65. Others declare they must recoup the losses occasioned by the shut-down and the attendant expense of building up their organizations again after resumption. These mention \$4.50 and \$5. Others are for getting all the market will stand. They boldly declare the country needs coal so badly and will be able to satisfy so little of its demand that Illinois and Indiana coals will match up with western Kentucky coal, which already has passed the \$6 point and may reach \$7 unless there is immediate production of coal from other fields.

"How long will it take you to get your mines into production again?" brings various replies from Midwest operators. In most cases the operators think hoisting can begin the second day. In other cases the answer is "It will take us a week to get the gas and water out and we'll have to do some cleaning up."

The Bell & Zoller Coal Co., operating Zeigler No. 1 and Zeigler No. 2 mines at Zeigler and a mine at Centralia, Ill., have bumped against a new difficulty. R. H. Zoller,

operating head of the company, said. Last week the company ordered its union engineers back to work at the union scale of wages, so that the giant Zeigler mines could devote the next few days to getting ready for work. The engineers demanded full pay for every day they have been off since April 1 or they wouldn't work.

"Naturally we refused," said Mr. Zoller. "That little item would have amounted to several thousand dollars." So the company is doing nothing to get ready beyond keeping up the operation of fans and a few pumps.

Quiet has reigned generally over the Illinois and Indiana fields except for threats against Indiana wagon mines by masked gangs of visitors. In one southern Illinois town the miners' local got together and voted to remain on strike. This is open to various interpretations, one of which is that miners opposed to the policies of Frank Farrington, state president, feared that possible developments at Washington might open a way for Farrington to negotiate for a state settlement in Illinois, and they merely wished to speak their little piece against such a deal.

"There's no possibility of Farrington making a separate deal," states a well-informed Illinois operator. "He has been doing a lot of talking about it for a long time, but he knows better than to try it. He knows he couldn't deliver, and he's afraid of a test of strength on that issue."

### ***Kentucky Has Severe Railroad Handicap But Hopes to Produce Heavily Soon***

FOR ten days or more the Harlan, Straight Creek and Jellico fields of southeastern Kentucky have been shut off as a result of a tight strike of railroad workers at Corbin, Ky., which has tied up movement of freight trains over three divisions of the Louisville & Nashville in that section. The strikers at Corbin have intimidated the merchants, who have refused to sell food to strike breakers, and boarding houses have refused to harbor them, while the authorities have ordered imported workers to leave town when sent to guard or work in railroad property. However, 200 men were sent to the Corbin shops on July 12, and the railroad is establishing a tent colony and commissary to take care of them. Corbin is in the mountain district, a lawless section, and difficult to handle.

Other sections of the state are not having much trouble as a result of the rail strike, and tonnage is moving freely. Hazard has had but a fair supply of cars, but the Chesapeake & Ohio, in northeastern Kentucky, has been going along giving good service. Western Kentucky also reports fair service. If the Corbin trouble is settled much heavier production will result.

### ***Is the State of Illinois in Earnest, or Is Herrin Probe "Merely a Gesture?"***

ATTORNEY-GENERAL Edward J. Brundage of the State of Illinois has made two moves giving the impression that Illinois is going to delve into the Herrin murders and prosecute the men guilty of the slaughter of a score of non-union strip miners and guards June 22. Early last week he publicly offered \$1,000 "for information leading to the arrest and conviction of persons who committed murder and assault" in Williamson County on the day which the county openly exults in having made "bloody." Later in the week he spent two days in the county and came away declaring he had some information of value which would not be revealed now but would be used to obtain further information. He said that no action would be taken before the present session of the Williamson County Grand Jury, but he indicated the state would have its case ready for the next session, which convenes in September.

"Just a gesture" was the comment of one of the best-known Illinois coal operators who has a mine in southern Illinois. "Nothing much will ever come of it. The state has no intention of going to the bottom of this thing. It only wants to go through a few more or less idle motions to calm the general demand that the bloody-handed gang down there be punished."

### ***Visitations of Coal "Ku Klux Klan" Scare Indiana Workmen from Wagon Mines***

MASKED men have been making flying visits to Indiana mines warning workers there to quit and not come back if they wish to retain their good health and chances of longevity. Late last week 25 such mysterious visitors dropped in for a pleasant call at Dr. Sample's wagon mine near Booneville, held up two men in charge, gave the warning against operation, damaged the machinery and departed. The owner has appealed to both county officials and Governor McCray for protection. A bigger gang visited Lunenburg's mine near the same town and ordered work there to stop.

### ***Sees Calm in Utah a Prelude to Storm***

NATIONAL GUARD rules regarding the recruiting of men to take the place of Utah mine strikers have not been strictly adhered to during the past week. There is, however, no campaign by the operators for strike breakers, as the strike leaders are protesting loudly against the action of the authorities in allowing the companies to send the few men that have been permitted to work. All is quiet but there are indications that would seem to point to another storm.

Some of the newspapers are outspoken in their disapproval of the Governor's policy of forbidding the operators a free hand in recruiting workers to replace the strikers. One editorial asks: "Is Carbon County a Part of the State of Utah or Is It a South European Dependency?" This question was prompted by the fact that a large proportion of the men out are Greeks, Italians or other foreigners, a large number of them unnaturalized. It is believed that these attacks will compel the Executive to allow the companies to send as many men to the coal fields as they can get, and if this is done there is bound to be bloodshed.

### ***West Virginia Mines Beat Records, Though Half Were Union at Inception of Strike***

SINCE the coal strike was declared, on April 1, West Virginia has taken the lead in the production of soft coal, all previous production records in many fields having been broken, notwithstanding the fact that about half the mines of the state were in the union category at the outset of the strike. All this is pointed out in a statement issued by the West Virginia Coal Association, in which it is said: "Since the strike was called the coal-mining regions of the state wherein the men were hampered by union restrictions began producing coal in a manner that surprised the buying public and astounded union officials, who had counted on endangering, according to their own statements, the nation's fuel supply to such an extent that the government would be forced to step in.

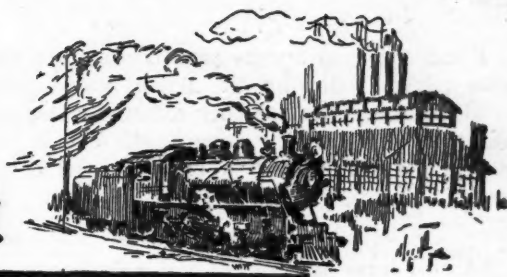
"The Logan district, which before the strike call produced about 50,000 tons daily, now produces about 65,000 tons daily; during some weeks the output is 100,000 tons more than before the strike. The Pocahontas field, which had a normal weekly production of 360,000 tons before the strike, produced 455,000 tons last week. Tug River district, which had a normal weekly average of 90,000 tons, shipped 111,000 tons a week ago. The Kenova-Thacker district, which before the strike loaded 108,000 tons a week, now ships well above the 200,000-ton mark each week."

ISSUANCE OF INJUNCTIONS in northern West Virginia became more frequent during the latter part of June and the first part of July owing to the difficulty operators in some instances have experienced in keeping their mines running in the face of organized interference. Among the companies which have recently obtained an injunction is the D. T. S. Coal Co., this injunction being against Louis Carpiel and other members of the United Mine Workers. It was granted by Judge W. S. Meredith, of the Marion County Circuit Court, and enjoins Carpiel and other officials of the United Mine Workers from interfering or attempting to interfere with the mining, shipping and selling of coal at the Thorn No. 1 mine in the Salt Lick Run section.





# Production and the Market



## Weekly Review

**T**HE long-heralded coal shortage seems to have arrived. An embarrassing lack of production, caused by the mine strike, has been increased by the railroad shopmen's strike. Normal transportation of freight has been impossible, mines which have been running have been forced to curtail operations and the slow movement all around has brought car shortage to the fore.

The coal market has reacted strongly to the combination which has limited much-needed tonnage. A general scramble for coal has resulted, in which Mr. Hoover's price list has been definitely outdistanced in the bidder's market which exists today. Large consumers are the most active purchasers, snapping up every available load on wheels. The steel industry is threatened with partial reduction of operation by the inadequate supply; railroads are insistent that a large share of the mine tonnage be turned over to them and shipping on the Great Lakes is menaced by the lack of vessel fuel.

### SPOT-PRICE INDEX RISES TWENTY POINTS

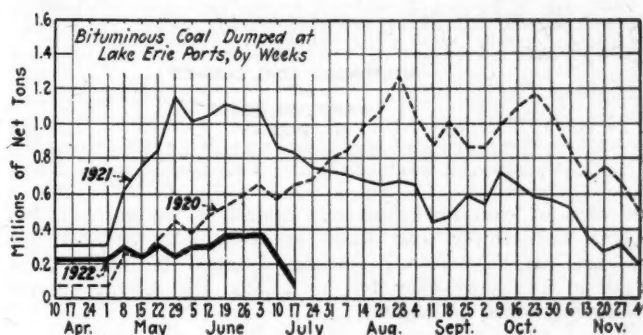
Coal Age Index of spot bituminous prices reached 321 on July 17, an increase of 20 points when compared with July 10. This week's index figure represents an average price at the mine of \$3.89, as compared with \$3.64 a week ago.

Western Kentucky coal was the mainstay of the Middle West last week and prices were not long in reflecting the strong demand. At this writing western Kentucky is being quoted around \$6.25, a full dollar over the last quotation carried on these pages, with every indication that it will go still higher. Eastern Kentucky operations were curtailed by rail troubles, as were West Virginia loadings, while western Kentucky mines were affected to a much lesser degree.

The market around Chicago continues to be the strongest of any section. Rail congestion has so de-

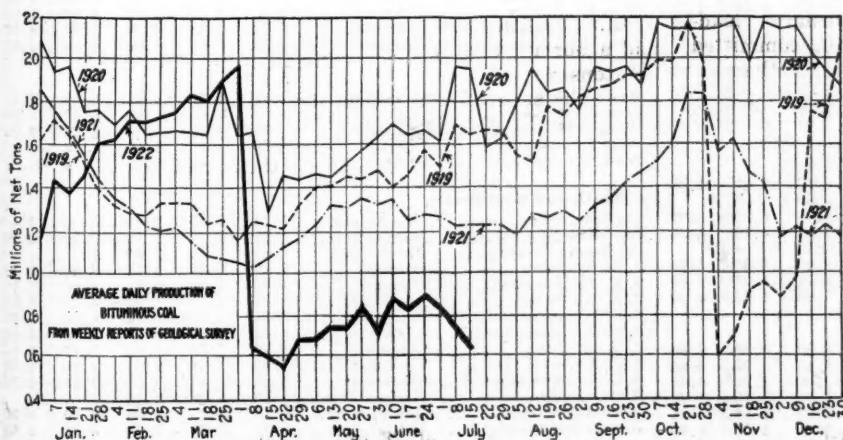
layed regular contract shipments that large consumers are buying car numbers on the spot market. Railroad supplies are on the verge of exhaustion and large consumers are forced to buy currently, as their reserves have declined below the danger mark. The same market conditions appear to be moving eastward—Cleveland and Cincinnati are hungry for coal, while the dwindling tonnage at the Hampton Roads piers and the meager all-rail receipts from Pennsylvania are being felt with increasing force in New England and the North Atlantic section.

The Northwest is on the verge of a critical fuel situation. Receipts by Lake have been pitifully low.



Dock stocks at the Head of the Lakes are now around 1,500,000 net tons, as compared with 4,342,000 tons at this time last year. The railroads own 600,000 tons of the present dock stocks, 409,000 is under contract or owned by industrials, and the small balance is being doled out to old customers only under the most careful restrictions.

Retail dealers continue to ration their remaining supplies of anthracite. Consumers are placing more orders but are not at all insistent about early deliveries. Most of these orders are being filed for attention when coal is again available.



### Estimates of Production

(Net Tons)

#### BITUMINOUS

Week ended:	1921	1922
June 24 (b)	7,704,000	5,363,000
July 1 (b)	7,658,000	5,227,000
July 8 (a)	6,165,000	3,936,000
Daily average	1,233,000	787,000
Calendar year	202,629,000	191,789,000
Daily av. cal. yr.	1,278,000	1,202,000

#### ANTHRACITE

June 24 (b)	1,847,000	24,000
July 1 (b)	1,868,000	25,000
July 8 (a)	1,525,000	23,000

#### COKE

July 1 (b)	47,000	114,000
July 8 (a)	34,000	92,000
Calendar year	3,432,000	3,308,000

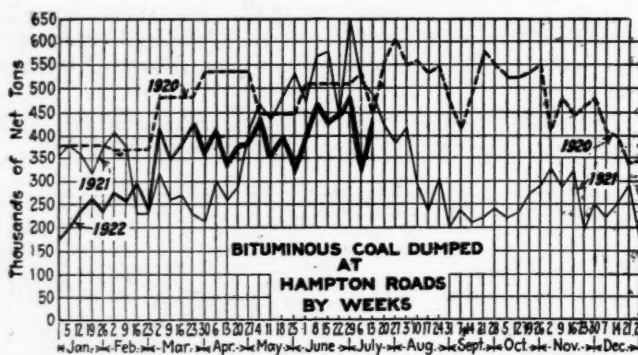
(a) Subject to revision. (b) Revised from last report.

Fresh labor outbreaks have occurred in the Connells-ville region following the Washington conference and production of coke has been affected. Demand for coke has increased, but the amount offering is too slight to induce blast furnaces to resume until conditions improve.

### BITUMINOUS

"A new cause has arisen to limit the production of coal," says the Geological Survey, "namely: local congestion of traffic associated with the strike of the railway shopmen. Because of the uncertainties of the situation it is difficult to forecast production for last week (July 10-15), but the record of the first four days suggests that the output of bituminous coal can hardly exceed 4,300,000 tons. Production of anthracite continues practically zero. Final returns on the week of Independence Day, the fourteenth of the strike, show that 3,936,000 net tons of soft coal were produced.

"The trend of production in the fifteenth week of the strike (July 10-15) may be gaged from the following table

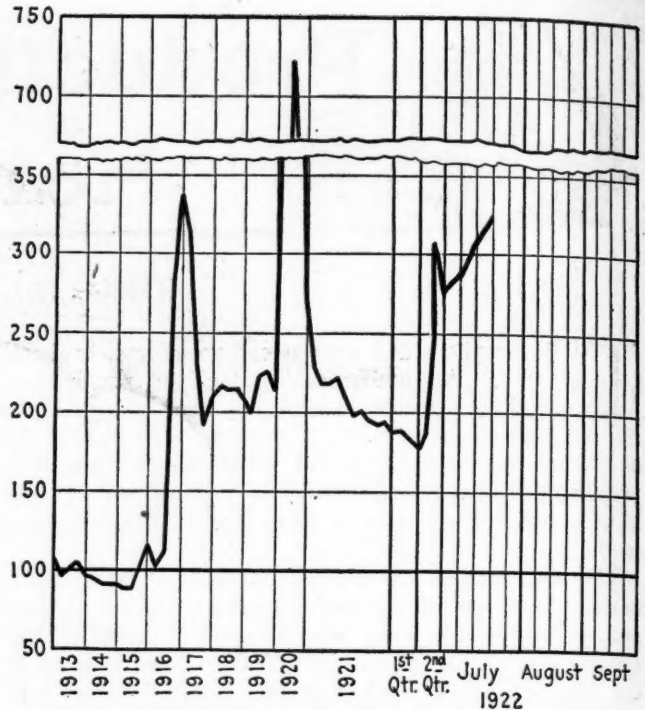


of cars of coal loaded daily. Monday's loadings (14,952 cars) were lower than those of Monday in other recent weeks, yet on Tuesday loading dropped to 12,829 cars, and on Thursday they fell to 11,584, the lowest on any Thursday since mid-April.

### DAILY CAR LOADINGS DURING THE STRIKE

	1st Week	10th Week	11th Week	12th Week	13th Week	14th Week	15th Week
Monday.....	11,445	14,597	15,474	15,311	16,747	11,039	14,952
Tuesday.....	11,019	15,269	15,849	16,622	15,748	334	12,829
Wednesday.....	11,437	15,999	14,905	17,032	15,656	11,979	12,304
Thursday.....	11,090	16,325	14,884	16,432	16,402	14,521	11,584
Friday.....	11,296	15,864	13,933	16,073	15,980	14,631	.....
Saturday.....	8,888	13,991	13,465	13,993	12,603	12,523	.....

"The cause of the decrease was congestion of traffic resulting indirectly from the shopmen's strike. The first



districts to be affected were Logan and eastern Kentucky, but in western Kentucky and southwestern Virginia also loadings soon began to decrease, and by Wednesday even the Pocahontas, Tug River and Kenova-Thacker districts were producing far below normal."

An additional lot of British coal was received in New England last week and it is understood that several charters for the shipment of Welsh coal to this country have just been closed. Should the present transportation difficulties continue, cargoes of British coal will be a common sight in North Atlantic harbors.

Hampton Roads dumpings for all accounts were 435,674 net tons during the week ended July 13, as compared with

### Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F. O. B. Mines

	Market Quoted	June 19, 1922	July 3, 1922	July 10, 1922	July 17, 1922†
<b>Low-Volatile, Eastern</b>					
Smokeless lump.....	Columbus....	\$3.50	\$3.65	\$3.65	\$3.85@4.00
Smokeless mine run.....	Columbus....	3.30	3.45	3.45	3.50@4.00
Smokeless screenings.....	Columbus....	3.15	3.25	3.25	3.25@3.60
Smokeless lump.....	Chicago.....	3.25	3.65	3.65	4.00@4.25
Smokeless mine run.....	Chicago.....	3.10	3.40	3.45	4.00@4.25
Smokeless lump.....	Cincinnati....	3.55	3.75	3.75	3.75@5.00
Smokeless mine run.....	Cincinnati....	3.40	3.45	3.50	3.50@4.25
Smokeless screenings.....	Cincinnati....	3.15	3.25	3.25	3.25
*Smokeless mine run.....	Boston.....	6.10	6.20	6.35	6.35@6.75
Clearfield mine run.....	Boston.....	3.05	3.45	3.50	3.00@3.75
Cambria mine run.....	Boston.....	3.50	3.70	4.00	3.50@4.25
Somerset mine run.....	Boston.....	3.20	3.50	3.65	3.25@3.75
Pool 1 (Navy Standard)...	New York....	4.40	4.80	.....	.....
Pool 1 (Navy Standard)...	Baltimore....	4.00	4.25	.....	.....
Pool 9 (Super.Low Vol.)...	New York....	4.05	4.65	4.40	.....
Pool 9 (Super.Low Vol.)...	Philadelphia..	4.30	4.55	4.70	4.60@4.95
Pool 9 (Super.Low Vol.)...	Baltimore....	3.85	4.00	4.40	4.50
Pool 10 (H.Gr.Low Vol.)...	New York....	3.80	4.40	4.25	4.75@4.90
Pool 10 (H.Gr.Low Vol.)...	Philadelphia..	4.00	4.25	4.45	4.40@4.75
Pool 10 (H.Gr.Low Vol.)...	Baltimore....	4.00	4.00	4.40	4.50
Pool 11 (Low Vol.).....	New York....	3.50	4.15	4.05	4.50@4.75
Pool 11 (Low Vol.).....	Philadelphia..	3.75	3.90	4.25	4.25@4.50
Pool 11 (Low Vol.).....	Baltimore....	3.50	3.90	3.90	4.25@4.40
<b>High-Volatile, Eastern</b>					
Pool 54-64 (Gas and St.)...	New York....	3.65	4.25	3.90	4.50@4.90
Pool 54-64 (Gas and St.)...	Philadelphia..	.....	.....	3.65	4.25@4.50
Pool 54-64 (Gas and St.)...	Baltimore....	3.50	3.90	3.90	3.75@4.40
Kanawha lump.....	Columbus....	3.35	3.65	3.65	3.75@4.25
Kanawha mine run.....	Columbus....	3.25	3.40	3.40	3.50@3.85
Kanawha screenings.....	Columbus....	3.25	3.15	3.15	3.25@3.50
W. Va. Splint lump.....	Cincinnati....	3.35	3.65	3.90	3.75@4.75
W. Va. Gas lump.....	Cincinnati....	3.35	3.65	3.90	3.75@4.75
W. Va. mine run.....	Cincinnati....	3.00	3.45	3.75	3.50@4.50
<b>Midwest</b>					
W. Va. screenings.....	Cincinnati....	\$2.90	\$3.25	\$3.35	\$3.25@4.00
Hocking lump.....	Columbus....	3.35	3.65	3.65	3.75@4.00
Hocking mine run.....	Columbus....	3.10	3.40	3.40	3.60@3.80
Hocking screenings.....	Columbus....	3.15	3.10	3.20	3.25@3.50
Pitts. No. 8 lump.....	Cleveland....	4.00	4.25	4.25	4.50@5.00
Pitts. No. 8 mine run.....	Cleveland....	3.70	4.00	4.00	4.25@4.50
Pitts. No. 8 screenings.....	Cleveland....	3.70	4.00	4.00	4.25@4.50
<b>South and Southwest</b>					
Big Seam lump.....	Birmingham..	2.20	2.35	2.35	2.30@2.40
Big Seam mine run.....	Birmingham..	1.85	2.15	2.15	2.00@2.40
Big Seam (washed).....	Birmingham..	1.85	2.15	2.40	2.25@2.50
S. E. Ky. lump.....	Chicago.....	3.50	3.65	3.75	4.00@4.25
S. E. Ky. mine run.....	Chicago.....	3.25	3.40	3.65	4.00@4.25
S. E. Ky. lump.....	Louisville....	3.75	3.75	3.90	4.25@4.50
S. E. Ky. mine run.....	Louisville....	3.25	3.50	3.70	4.00@4.25
S. E. Ky. screenings.....	Louisville....	3.10	3.50	3.50	4.00@4.50
S. E. Ky. lump.....	Cincinnati....	3.50	3.70	3.90	3.75@4.75
S. E. Ky. mine run.....	Cincinnati....	3.05	3.50	3.75	3.50@4.50
S. E. Ky. screenings.....	Cincinnati....	2.85	3.20	3.25	3.25@4.25
Kansas lump.....	Kansas City..	5.00	5.00	5.00	5.00
Kansas mine run.....	Kansas City..	4.25	4.25	4.25	4.50@5.00
Kansas screenings.....	Kansas City..	2.95	3.05	2.80	4.00@4.50

\*Gross tons, f. o. b. vessel, Hampton Roads.

†Advances over previous week shown in heavy type, declines in italics.

NOTE—Smokeless prices now include New River and Pocahontas.



338,800 tons in the week previous. The heavier dumpings have reduced the pier accumulations materially, as car movement from the mines has been hard hit by the rail shopmen's strike. The movement from the Southern fields was so heavy that it had taxed transportation facilities to the utmost, and with internal labor troubles the railroads could not be counted on for a continuance of the heavy volume of coal freight.

New England buyers have awakened, at least in part, to the advisability of making some additional commitments. The increase is not heavy but is particularly noticeable coming just at the time when the easy movement to Hampton Roads has been interrupted. All-rail shipments were 481 cars during the week ended July 8, as compared with 642 cars in the preceding week. The light movement is confined almost entirely to railroad contracts.

#### TIDEWATER BITUMINOUS COAL SHIPMENTS IN JUNE, 1922

(In Thousands of Net Tons)							
Destination	New York	Philadelphia	Baltimore	Hampton Roads	Charles-ton	June Total	May Total
Coastwise to New England.....	10	2	..	837	25	876	873
Exports.....	..	6	..	95	3	104	302
Bunker.....	109	12	7	166	7	302	453
Inside capes.....	..	31	26	233	..	291	240
Other tonnage.....	150	..	..	614	..	764	675
Total, June.....	269	52	33	1,945	35	2,337	..
Total, May.....	264	84	43	1,723	30	..	2,543

Lake dumpings were 159,655 net tons during the week ended July 17—153,516 tons cargo and 6,139 tons vessel fuel—as compared with 252,105 tons in the previous week. Nearly 900,000 tons of this season's dumpings to date have gone to new destinations on Lake Erie and the Head of the Lakes apparently faces a distressing shortage of fuel next winter. Total Lake tonnage handled this year now stands at 4,233,772; in 1921 it was 11,907,210.

#### COKE

Beehive coke production during the week ended July 8—92,000 net tons—felt the effect of the Independence Day holiday. The labor situation in the Connellsville region was not so satisfactory last week. Demand is exceedingly strong but is mostly from foundries and miscellaneous users, as the available spot tonnage is too slight and costly to interest blast furnaces.

June production of beehive coke was 458,000 net tons; byproduct, 2,580,000, a total of 3,038,000 tons, as compared with 2,969,000 tons in May. This output consumed 4,429,000 tons of coal; 3,707,000 tons in byproduct ovens and 722,000 tons in beehive ovens.

### How the Coal Fields Are Working

Percentages of full-time operation of bituminous coal mines, by fields, as reported by the U. S. Geological Survey in Table V of the Weekly Report.

	Six Months July to Dec. 1921	Jan. 1 to Apr. 1, 1922 inclusive	April 3 to July 1, 1922 inclusive	Week Ended July 1
U. S. total.....	45.6	55.7	..	..
Non-Union.....	..	..	..	..
Alabama.....	63.5	64.6	71.9	87.2
Somerset County.....	55.5	74.9	45.7	49.8
Panhandle, W. Va.....	55.3	51.3	43.4	53.6
Westmoreland.....	54.9	58.8	82.1	85.4
Virginia.....	54.8	59.9	80.6	86.3
Harlan.....	53.3	54.8	54.5	50.9
Hazard.....	51.7	58.4	60.5	44.3
Pocahontas.....	49.8	60.0	76.9	81.8
Tug River.....	48.1	63.7	83.2	85.8
Logan.....	47.6	61.1	77.5	79.8
Cumberland-Piedmont.....	46.6	50.6	15.6	16.2
Winding Gulf.....	45.7	64.3	71.4	72.3
Kenova-Thacker.....	38.2	54.3	79.7	82.9
N. E. Kentucky.....	32.9	47.7	no report	..
New River.....	24.3	37.9	26.4	51.3
Union.....	..	..	..	..
Oklahoma.....	63.9	59.6	14.4	16.4
Iowa.....	57.4	78.4	0.0	0.0
Ohio, Eastern.....	52.6	46.6	0.0	0.0
Missouri.....	50.7	66.8	1.7	4.1
Illinois.....	44.8	54.5	0.0	0.0
Kansas.....	42.0	54.9	14.4	24.3
Indiana.....	41.4	53.8	0.0	0.0
Pittsburgh.....	41.2	39.8	0.0	0.0
Central Pennsylvania.....	39.1	50.2	11.6	11.6
Fairmont.....	35.3	44.0	no report	..
Western Kentucky.....	32.5	37.7	61.0	70.5
Pittsburgh*.....	30.4	31.9	0.0	0.0
Kanawha.....	26.0	13.0	5.2	10.0
Ohio, Southern.....	22.9	24.3	0.0	0.0

\*Rail and river mines combined.

† Rail mines.

‡ Union in 1921, non-union in 1922.

#### Car Loadings and Surpluses

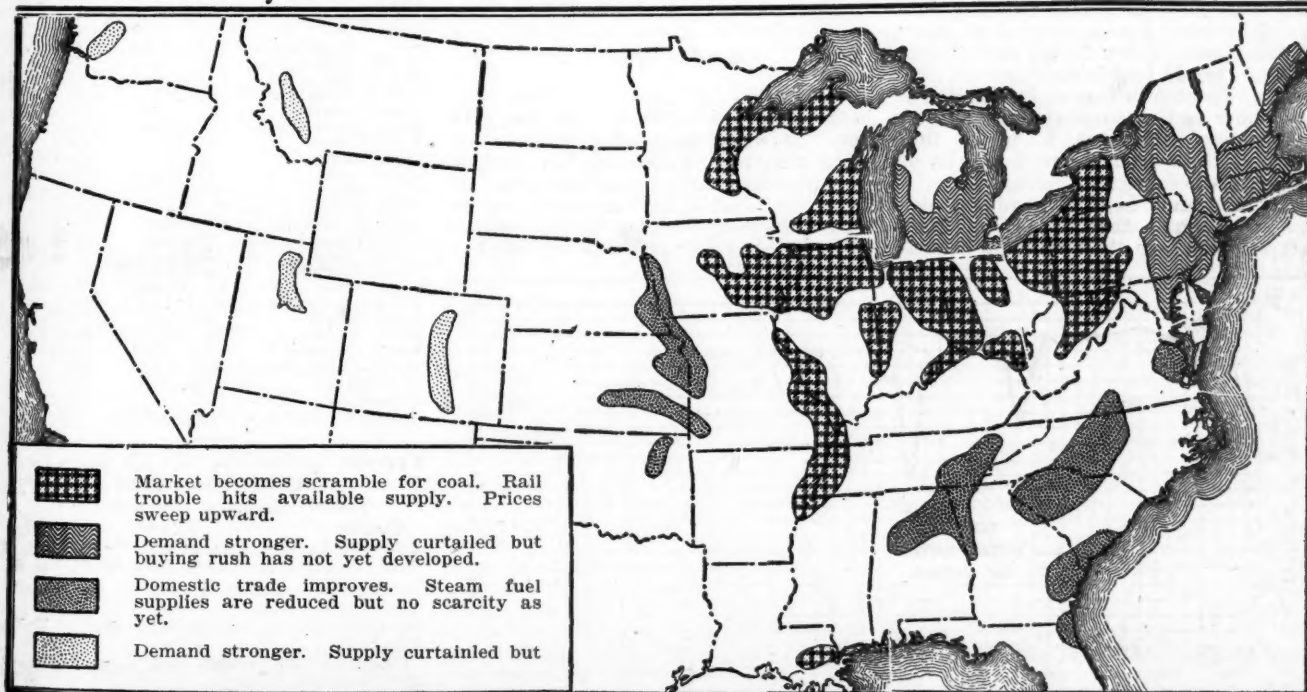
	All Cars	Coal Cars
Cars loaded:		
Week ended July 1.....	876,896	94,748
Previous week.....	877,856	96,960
Same week a year ago.....	776,079	157,113
Surplus cars:		
June 30.....	239,225	147,558
June 23.....	255,685	160,733
Same date a year ago.....	..	164,000

#### ANTHRACITE

Production of hard coal, which is confined to river barley, was 23,000 net tons during the week ended July 8. Shipments continue to go forward from the storage yards, being 4,101 cars during the week. Aside from pea coal, there is very little free tonnage to be had.

New England stocks of hard coal have dwindled to 315,391 net tons as of July 1. On April 1 these were 726,611 tons. Since then there have been receipts of 421,923 tons and deliveries of 833,143 tons.

### Relative Activity of Markets for Bituminous Coal at End of Fifteenth Week of Strike



## Foreign Market And Export News

### British Wage Question Nears Crisis

British production during the week ended July 1 was 4,530,000 gross tons, according to a cable to *Coal Age*, as compared with 4,354,000 tons in the previous week. The South Wales export market is unimproved and prices are softer. Rail freights have been reduced, those applying on coal by 15 per cent, and this may have a stimulating effect on the trade.

The audit of the colliery books for the month of April showed that there would be practically no profits for the industry as a whole, and that consequently wages would not rise above the minimum anywhere. It was apparent that wages would continue at the minimum throughout August and much dissatisfaction arose among the miners.

The president of the South Wales Miners' Federation, addressing the annual conference said the executive thought it quite impossible that the men could continue another six months under the conditions which had prevailed so long. They had agreed to recommend that the national executive be urged immediately to approach the coal-owners and endeavor to induce them to increase wages to not less than 60 per cent above pre-war wages, and if they failed to then meet the government and make it clear that it was quite impossible to expect miners to continue any longer under the present wage system.

A decision has been arrived at by the Nottinghamshire Miners' Association in favor of terminating the National Agreement.

### French Coal Prices Slightly Lower

The French market was rather inactive during the last days of June, purchasers of industrial coals having postponed their orders pending the issue of the new price-list, effective July 1. The new prices show but slight modifications—a few francs at the most—from the old schedule.

The French Minister of Public Works and Labor had a second conference with the miners' delegates, to whom they gave, at their request, more details on the cost prices of the collieries.

On the other hand, the miners' delegates declared that the Eight Hour Act could not, in their opinion, be held

responsible for the considerable decrease in individual output, which they ascribe to other causes.

The ministers then asked the delegates to state exactly by writing what are these other causes.

### Export Clearances, Week Ended July 13, 1922

FROM HAMPTON ROADS:	
For Brazil:	Tons
Br. S.S. Tennyson, for Buenos Aires...	3,874
For Cuba:	
Dan. S.S. Anna Maersk, for Cienfuegos	1,932
For Ecuador:	
Br. S.S. Alvarado, for Guayaquil	1,014
For Peru:	
Nor. S.S. Varg, for Callao	802

### Hampton Roads Pier Situation

	—Week Ended—	
	July 6	July 13
N. & W. Piers, Lamberts Point:		
Cars on hand	2,481	984
Tons on hand	144,528	61,352
Tons dumped	137,209	167,627
Tonnage waiting	30,000	20,000
Virginia Ry. Piers, Sewalls Point:		
Cars on hand	1,893	1,522
Tons on hand	122,000	83,950
Tons dumped	95,177	128,640
Tonnage waiting	25,000	38,000
C. & O. Piers, Newport News:		
Cars on hand	1,756	1,090
Tons on hand	94,000	76,000
Tons dumped	70,114	92,728
Tonnage waiting	18,000	5,015

### Ruhr Mine Strike Is Averted

An agreement was reached on the eve of a general strike of coal miners in the Ruhr Valley after a conference between the Minister of Labor and the miners' leaders and mine owners. This, however, will require final ratification by the miners' district convention before it becomes effective.

The Ruhr coal output, including that of the collieries left of the Rhine, in May amounted to 8,081,951 metric tons (7,512,646 tons in April), or 310,844 tons (326,637 tons) per working day. In the same period, 2,075,238 tons (2,032,679 tons) of coke and 298,964 tons 302,657 tons of briquets were produced.

The price of unwashed coal has been raised to 1,208 m. per ton. In June 2,000,000 tons of English coals were imported. Unless the Reparations Commission grants an added period of grace to enable her to catch up in coal deliveries, Germany will be obliged to make heavy purchases of English

coal for distribution among the Allied States. The Cabinet discussed the situation in the course of a special council meeting at which it was admitted Germany is heavily in arrears in her deliveries.

Production of coal in the Ruhr district during the week ended July 1 was 1,320,000 metric tons, according to a cable to *Coal Age*.

### Rail Strike Cuts Supply at Roads

The strike of railway employees has spread to the clerks of the N. & W., and C. & O., with the result that the movement of coal from the mines to piers, impeded when the shopmen went out July 1, is being more seriously held up.

Less than 200,000 tons was on hand at the local piers at the end of the week. The N. & W. has notified shippers it will accept coal only for indefinite delivery.

The coal trade is in a state of mild turmoil, with prospects of further unsettled conditions next week. Prices quoted at the local piers went up to \$6.50 @ \$7 for all grades, no distinction being made between them.

### Coal Paragraphs from Foreign Lands

ITALY—The price of Cardiff steam first is now quoted at 36s. 6d., according to a cable to *Coal Age*.

BELGIUM—Domestic coals are being put into stock and only the classified descriptions continue to be sold in proportion to the production, the greater part going to France and Holland. The industrial market seems to show a slightly better tendency. Half-bituminous and steams are in demand, in particular slack for making briquets.

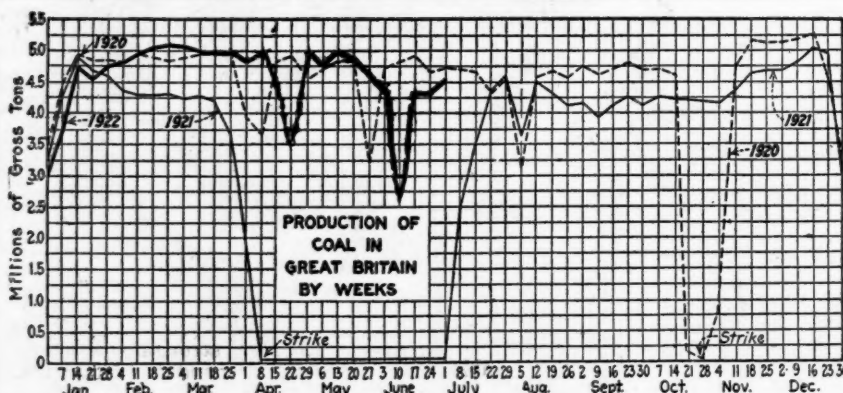
### Pier and Bunker Prices, Gross Tons

PIERS	
	July 8      July 15†
Pool 11, New York	\$7.00 @ \$7.25      \$7.50 @ \$7.75
Pool 9, Philadelphia	7.60 @ 8.20      7.75 @ 8.30
Pool 10, Philadelphia	7.50 @ 7.75      7.60 @ 7.90
Pool 71, Philadelphia	8.50      8.60
Pool 1, Hamp. Rds.	6.25 @ 6.40      6.50 @ 6.75
Pools 5-6-7 Hamp. Rds.	6.25      6.25 @ 6.75
Pool 2, Hamp. Rds.	6.25      6.25 @ 6.75
BUNKERS	
Pool 11, New York	\$8.00 @ \$8.25      \$8.00 @ \$8.25
Pool 9, Philadelphia	7.75 @ 8.35      8.00 @ 8.50
Pool 10, Philadelphia	7.60 @ 8.15      7.75 @ 8.35
Pool 1, Hamp. Rds.	6.25 @ 6.40      6.50 @ 6.75
Pool 2, Hamp. Rds.	6.25      6.25 @ 6.75
Welsh, Gibraltar	43s. f.o.b.      43s. f.o.b.
Welsh, Rio de Janeiro	57s. 6d. f.o.b.      57s. 6d. f.o.b.
Welsh, Lisbon	43s. f.o.b.      43s. f.o.b.
Welsh, La Plata	50s. f.o.b.      50s. f.o.b.
Welsh, Genoa	42s. t.i.b.      42s. t.i.b.
Welsh, Messina	39s. f.o.b.      39s. f.o.b.
Welsh, Algiers	39s. 6d. f.o.b.      38s. 6d. f.o.b.
Welsh, Pernambuco	65s. f.o.b.      65s. f.o.b.
Welsh, Bahia	65s. f.o.b.      65s. f.o.b.
Welsh, Maderia	42s. 6d. f.a.s.      42s. 6d. f.a.s.
Welsh, Teneriffe	40s. 6d. f.a.s.      40s. 6d. f.a.s.
Welsh, Malta	44s. 6d. f.o.b.      44s. 6d. f.o.b.
Welsh, Las Palmas	40s. 6d. f.a.s.      40s. 6d. f.a.s.
Welsh, Naples	38s. f.o.b.      38s. f.o.b.
Welsh, Rosario	52s. 6d. f.o.b.      52s. 6d. f.o.b.
Welsh, Singapore	55s. f.o.b.      55s. f.o.b.
Welsh, Constantinople	50s. f.o.b.      50s. f.o.b.
Port Said	49s. f.o.b.      49s. f.o.b.
Alexandria	43s. f.o.b.      43s. f.o.b.
Capetown	35s. 3d.      35s. 3d.

### Current Quotations British Coal f.o.b. Port, Gross Tons

Foreign Quotations by Cable to Coal Age	
Cardiff:	July 8      July 15†
Admiralty, Large	24s. 6d. @ 25s.      24s. @ 24s. 6d.
Steam, Smalls	17s. 6d. @ 18s.      17s. 6d. @ 18s. 6d.
Newcastle:	
Best Steams	24s.      24s. @ 24s.
Best Gas	21s. 6d. @ 22s.      21s. 6d. @ 22s. 6d.
Best Bunkers	20s. 6d.      20s. 6d.

†Advances over previous week shown in heavy type; declines in italics.





## North Atlantic

### Stronger Demand, as Usual, Follows Curtailed Receipts

**Shortage Conditions Prevail, with Less Than 500 Cars at N. Y. Piers on Monday—Rail Trouble Hits Flow of Southern Tonnage—Carriers Take Large Share of Pennsylvania Fuel Mined.**

SHORTAGE conditions have slowed the curtailed receipts which have prevailed for the last ten days. On Monday there were less than 500 cars at the New York piers, while the flow of Southern coals via Hampton Roads was reduced by the transportation disability caused by the railroad labor trouble. So far, the Pennsylvania mines have been given a good car supply, but the carriers have insisted on a large share of the loadings to meet their requirements.

Coincident with the reduced movement of coal has come a stronger demand, as reserves have been depleted to a point where replenishments are imperative. Prices have advanced, especially on line business and if the scarcity continues price will be no object.

#### NEW YORK

Coal is becoming scarcer here. There were less than 550 cars at the loading piers on July 14 and most of it was Pool 11 or poorer quality. The line trade was strong although spotty, and quotations were higher than on the Tidewater basis.

It is reported that plenty of empty cars are at the various railroad distributing points but that the companies refuse to put them in at the mines unless assured they would secure a large percentage of the tonnage loaded.

Buyers are buying "coal" in most instances, ignoring the pool number. The poorer grades of low-volatile coals were quoted \$4@4.25 f.o.b. mines and the better grades \$4.50@\$5. High-grade gas screened coals were scarce but were held at around \$5. B. R. & P. coals were quoted \$4.25@\$4.50.

Southern coal was being brought here in large tonnages, most of it on consignment. Free lots of these coals were quoted \$8@\$8.50. The number of loaded boats in the harbor is being steadily reduced, quotations ranging \$7.40@\$8.

#### PHILADELPHIA

Users of fuel are more anxious recently, especially those who have had coal on the run for some time and are finding delivery retarded. Inquiries have increased greatly during the last few days, but with hardly enough coal available to meet the spot demand. The railroad situation is such that even

when orders are placed no one would give any kind of assurance of time of delivery. In this respect shipments originating on the B. & O. have been particularly hard hit, and as a result gas coals from the Fairmont district are difficult to purchase.

There is much dissatisfaction among the operators over the suggested plan for resumption of mining and there is much adverse comment heard. This feeling has been communicated to the consumer and has in itself added much to the urgency for more coal. The chief objections to the President's tender are from union mine owners, who say if they accept they will be at a distinct disadvantage, because the mines in non-union territory, working at the lower wage schedule, will be able to produce coal at a much lower cost and will practically have the entire market to themselves.

Prices have stiffened considerably and very little talk is heard now about an agreed price for this State. High-grade coals remain extremely difficult to procure.

#### CENTRAL PENNSYLVANIA

The daily output is now averaging 600 cars. Production was somewhat curtailed by the July 4 holiday and the organization of the miners at Colver, where the Ebensburg Coal Co. had been in full operation until last week. United Mine Workers were successful in forming a local union at Colver on July 9, and called out a majority of the miners.

Prices are slightly higher. Pool 1 is ranging \$4.25@\$4.75; Pool 10, \$4.25@\$4.50, and Pool 11, \$4@\$4.25.

There is no enthusiasm among operators in this field over the President's proposal. They express the thought that if accepted, it will be only because of a sense of duty. Operators generally think the plan would only continue the high prices.

#### BALTIMORE

With the stocks of the larger industries here at last depreciating at a rate that has caused alarm, there has developed a rush of buying which has quickly wiped out the available coal awheel. At present it is not a question of price, although the advance is not marked as compared with a week ago.

Even bunker coals, which are almost wiped out, when available at all are under \$7.30 at the piers. The majority of general cargo vessels loading here are now going to Hampton Roads for bunkers.

There is practically no Pennsylvania line coal offering at this point, all-rail. It is easy to command \$4.50 f.o.b. mines when such coals are offered. Even B. & O. coals which have been in better supply since the start of the coal strike have fallen off. There was not as much difference in grade quotations, as had been the case for some time.

Shipments of Pocahontas and New River continue to be received from Hampton Roads by barge. Total receipts under this method have probably been close to 100,000 tons during the

past six or eight weeks. While the move for a new tariff on New River coal of \$3.65 was established July 5, on shipments direct from mines to Baltimore all-rail, no considerable movement has taken place in this direction as yet.

#### UPPER POTOMAC

The Davis Coal & Coke Co., having secured an injunction to restrain strikers from interfering with the operation of its plants at Thomas and Henry, this company has made preparations to resume operations. Field conditions approached somewhat nearer normal, with many of the plants in operation, some of them on a normal basis. Shipments were not affected by the strike of shop workers, inasmuch as the Western Maryland has had a force of strike breakers at work for some time.

#### FAIRMONT

Reduced operations before and after the July 4 holiday tended to lower the output. Train service was not as smooth as it had been before July 1. More coal was being sought by industries, the demand exceeding the supply. Prices were at the maximum, particularly on mine run.

## South

#### BIRMINGHAM

While the steam demand is not quite as strong from outside territory, inquiry is still good and orders taken on from foreign and local consumers are sufficient to move all the free coal obtainable. Industries in Arkansas, Mississippi, Louisiana and Georgia bought a good deal of coal in the aggregate, nearly all business, both railroad and industrial fuel, being for prompt shipment. Quotations range from \$2.20 per ton for Big Seam mine run to \$2.60 for the better grades, the washed product ranging \$2.25@\$2.75, or practically the same as prices for the previous week.

Domestic coal is moving fairly well, a slightly better demand being reported for Carbon Hill grades and other medium qualities, the better grades being well sold up for several months ahead. As a rule sales were made on basis of the July schedule as given last week.

Production is holding up well, although interfered with to some extent by car and labor shortage and inability on the part of the railroads to give prompt and efficient service. The output for the week of July 1 was 360,000 net tons, as reported to the Alabama Mining Institute. Preparations are being made to start several more furnaces in the district, which will necessitate increased production in this direction.

#### VIRGINIA

Production continues in an upward direction, insofar as labor and the car supply permits. With coal in strong demand, little effort is being made to increase the coke output, which is now averaging about 5,000 tons a week. There are few idle mines in this territory. Prices are stronger as the result of a better demand, the steam market being especially active.

## Anthracite

### Wholesale Orders Flow In; Householder Still Apathetic

Washington Conference Creates Feeling That Mining Will Be Resumed Soon—Effect of Rail Strike Seen—Retailers Make Deliveries Only Where Need Is Pressing.

**W**HOLESALE dealings are confined to pea coal and river barley. With so much being heard of the strike situation in Washington, there are many orders flowing in, as the feeling prevails that mining may be resumed before long. This attitude of placing "applications" is shared, but to a lesser degree, by the retail consumer.

Some of the late business is attributable to the effect of the rail strike upon the buyer. However, the old attitude of the householder has been jarred but little from the indifference he has shown all summer. Retail stocks are being watched more jealously than ever and unless there is urgent need for the coal, retailers are not making deliveries.

#### NEW YORK

Dealing in anthracite is confined almost wholly to pea and river barley. The other coals have nearly all disappeared from the wholesale market. Retail dealers outside of Manhattan and Brooklyn have fair stocks of all sizes while most of the dealers in the two Boroughs named are entirely out of the larger sizes.

Those in short supply are deeply interested in the outcome of President Harding's proposal to the operators and miners. They realize now that there is bound to be a scarcity of coal this fall and winter and that they will be forced to take in their needs piecemeal.

Storage piles of pea coal are rapidly disappearing, and in Pittston, the heart of the anthracite fields, it is being sold for \$8.50 per ton, as compared with \$7.40 previous to the suspension. Some independent pea was reported as being quoted here at \$6.75 f.o.b. mine, during the past week.

There was some river barley quoted during the week \$2@2.50, and it was also reported that an offer of silt at \$2.10 f.o.b. place of loading had been made to local dealers.

#### BALTIMORE

The principal feature of the market at present is that consumers are now growing restive and are calling up their retail supply connections in an effort to assure deliveries. The fact that a number of dealers are telling their customers that they can give no assurance of supplies, even when cold weather arrives, is causing a stir. The sudden

turn of interest of the public was undoubtedly the result of the rail strike of shopmen and its complications.

#### ANTHRACITE FIELDS

The main topic of conversation in the region is the President's endeavor to secure a resumption of mining. There is a feeling among the men that they will soon be at work again. Recently it was reported that the railroads were distributing empties, which the miners take as a sign of early resumption. There was no disorder in the region last week.

#### PHILADELPHIA

Retailers are quite confident that the resumption of mining is not far off, although it cannot be said this feeling of confidence is shared to the same degree by the producing end of the trade. The public also seems to feel that it will soon be able to buy coal, which is shown by the number of orders which the dealers are asked to accept for future delivery.

There is a belief among some that even though the mines do get back to production under the President's plan, there is every chance of another suspension should the report of the commission be unfavorable to the men. With this in mind there is no question that every dealer will order in as much coal as his yard can possibly hold.

There is still considerable effort to lay in supplies, caused by the more serious aspect of the rail strike. As all dealers have pea coal, and can easily replenish their supplies, this is the one size that is being sold. A number of the larger dealers are replacing their stock of pea almost car for car. The shippers are also moving a slight amount of pea for steam use, but this demand has not developed to much extent so far. River barley remains the only steam coal on the market, with price inclined to become firmer, \$2@2.75.

#### BUFFALO

The belief that the strike is to be lifted soon may be the reason for the continued light demand. A little more call for it exists than formerly, but it is nothing remarkable. Consumers have not been accustomed to buy much coal in summer and they are going on now much as if nothing had happened.

The complaint now is that if the government is able to propose or to force a measure for settling the strike it should have done so months ago.

#### BOSTON

The public continues apparently quite indifferent to the prolonged suspension and all its implications. Householders seem content to put in their "applications" and set out for their vacations with little thought for next fall and winter. Reserves in the hands of retail dealers have now dropped so low that the Massachusetts Fuel Administrator has decided to attempt nothing of a regulatory nature for the present. Meanwhile, the originating com-

panies have nothing but pea for shipment. For this size there is a reasonably steady demand among dealers in the larger cities, but there is no special inquiry that would in any way justify an advance in price.

### Coke

#### CONNELLSVILLE

Offerings of coke have decreased farther, chiefly on account of some fresh striking, commonly attributed to the proposal at Washington of a plan for ending the coal strike, which the workers in the Conneltsville region consider decidedly in their favor. There is also an increased demand from foundries and miscellaneous consumers. There is practically no demand for Conneltsville coke for blast furnace use, both because prices are altogether too high to justify furnaces in taking hold and because the offerings are in quantities too small to interest a blast furnace.

Even \$10 seems now to be out of the question, reports being of recent sales at \$10.50@11. The coke is usually sold simply as "coke," since selection is difficult nowadays, but the buyers include foundries.

The advance in prices is of little practical importance, on account of the small tonnage involved. Production of the region is light, 80 per cent is by furnace ovens and of the remaining 20 per cent much is moving on old contracts.

The *Courier* reports production during the week ended July 8 at 43,790 tons by the furnace ovens and 10,130 tons by the merchant ovens, a total of 53,920 tons, a decrease of 16,290 tons, the decrease being attributed to the holiday.

#### UNIONTOWN

The shopmen's strike is an active deterring factor upon coal production only upon the B. & O. where no cars have been placed for loading since the strike began two weeks ago. The Pennsylvania and Pittsburgh & Lake Erie continue to supply maximum car demands to operators in the lower Conneltsville region.

The conviction is slowly sinking in among striking miners that the Washington conference gives all appearances of ending the strike without considering what grievances they may have. Operators have taken advantage of the low morale of the strikers and have issued a general "work or move" notice with the result that the county court is flooded with eviction notices, more than 400 being served this week.

The coal market is reacting strongly to the combined coal and shopmen's strike. Buyers are numerous, with steel and railroad interests the big purchasers. The car shortage spectre is hovering over the entire situation.

Prices quoted are steam, \$4.50@4.75; byproduct, \$4.75@4.90.

#### BUFFALO

The supply is still less than the demand, but it appears to be met by some sort of fuel that can be made to answer the purpose. Anthracite consumers are looking at it, as something that may have to be put into the place of hard coal.



## Chicago and Midwest

### Western Kentucky Coal Is Market's Headliner

**Climbs a Dollar and More in One Week  
with Higher Prospects—Railroad  
Troubles Keep Flow of Fuel Down—  
Midwest Wants to Work.**

A GENERAL scramble for coal of any description has continued throughout most of the Midwest region during the past week. This has been especially true around Chicago where prices have topped those of any other market. Western Kentucky reached \$6.50, with distinct signs of going on up, though it was selling at \$5.50@5.75 simultaneously in St. Louis.

Not much coal was shipped out of the eastern Kentucky or West Virginia fields into this region because of the various transportation difficulties. A little got through, however, some of which sold at the Hoover prices, but most of it topped \$4. The situation is embarrassing the few eastern Kentucky operators who are keeping within Hoover's level as the car supply is so meager that they are scarcely making both ends meet.

Buying throughout the region was so keen, supply so short from everywhere and delivery failures have been so common of late, that every buyer demanded car numbers. Enough consumers have failed to get coal for which they hold short-term contracts, that buying has been much upset by sudden rushes for fuel by excited men willing to pay anything to get enough coal to tide them over a low spot. Railroads are on the verge of fuel exhaustion. Some are not "good" for more than a week.

Dealers in this region have been feeling, for several days, a stiff demand for threshing coal—a demand greater than anybody anticipated. In many cases they have been unable to satisfy it. Anthracite business is dead.

Everyone has so lively an interest in what is going on at Washington, and a plan for resumption of mining has been expected hourly for so long, that the strain hereabouts is growing almost unbearable. Nobody knows what to plan, yet everybody is trying to plan. Most operators are keen to get back to mining.

### CHICAGO

Western Kentucky coal remained the unchallenged headliner on the Chicago market during the past week. Quotations ascended a little more than a dollar to a height of \$6.25 by Saturday. And not satisfied with that, this coal was poised at the close of trading Saturday for a further flight into more rarefied market atmosphere. "We'll

have seven dollar coal right away" was the flushed prophecy of the few favored jobbers who were able to get a firm hold on coal from the western Kentucky field, and almost everybody in town seemed to agree with them. But few if any actual sales had crossed the \$6.50 mark by the end of the week, in spite of the hectic reports which fluttered around Chicago.

While the market level on western Kentucky coal was astonishingly buoyant, the volume of coal was insignificant so that the total amount of money changing hands was small. Demand was keen enough at one time or another during the week in spite of the rise and fall of hope that a strike settlement was coming out of Washington, but the delivery of fuel from the field was greatly reduced by all sorts of transportation obstacles.

Eastern Kentucky operators have, in some instances, stuck to the Hoover levels of price, but most of the coal from that region got out of hand as to price so that the average quotations on this market, for what little coal changed hands, is just above \$4. Smokeless, also in infinitesimal volume, has attained about the same level. Practically no coal from any other fields was heard of on this market during the week.

### ST. LOUIS

The storage piles at the smaller steam plants in St. Louis are getting dangerously short. There is some coal moving in every day but very little and the demand continues to grow. The market is quoted at \$5.50 to \$5.75 for all sizes of western Kentucky. Prompt shipment cannot be promised on any road.

Some coal is moving from Alabama, but it is unsatisfactory. The prices range from \$2.25 on mine run up to \$3.50 on screened coal, with a freight rate of \$3.67. A little Missouri coal is coming in from Moniteau County to the St. Louis switching limits at \$5@5.50 at the mine, with a rate of \$1.87½.

The domestic situation is quiet locally but country demand for steam is good. Throughout the central part of Missouri, the territory is being supplied in a way by local mines and strip pits.

### LOUISVILLE

Louisville sees a general improvement of transportation conditions in the eastern Kentucky fields which have been so tightly tied up for lack of cars and motive power. In Louisville the railroads are making progress toward better service, which has a vital effect upon the coal market.

Reports received indicate that some of the eastern Kentucky mines are sold out to August or later, but investigation shows that most concerns can fill orders on hand quickly if they can get cars. Other than Lake and a little railroad, there has not been much contract business accepted.

Demand is chiefly from public utilities, railroads, and, increasingly, from retail and general industrial buyers,

while Lake movement is steady. Prices throughout the state show an increase of about a dollar a ton over last week, as eastern Kentucky is quoting from \$4@4.50 and western Kentucky, \$6.00@6.25 a ton, according to size. Screenings are carrying a premium.

### INDIANAPOLIS

While there appears to be a fair coal supply in the city and a reasonable amount being offered, prices have broken loose from the Hoover maximum and the law of supply and demand rules the prices. Public utilities and big consumers in Indianapolis have been offered both Kentucky and West Virginia coal at \$5 a ton for mine run. This with the revised freight rate of \$2.16 from Kentucky and slightly higher from West Virginia, brings the price close to \$7.50.

Indianapolis is far from being short and while some of the larger consumers who did not buy far ahead are being compelled to pay for their experience, they have sufficient coal on hand to keep running for some time.

### SOUTHERN ILLINOIS

"Calm" is the shortest word to describe the condition in the southern Illinois field at present. Throughout Williamson and Franklin County things are unusually quiet. The United Mine Workers' officials sent word to the miners in this field that the reputation of the entire organization has been damaged too much already. As a result, the miners in this section are trying to overdo themselves in keeping within the law, although a little local trouble develops occasionally when a miner meets one of the men employed in pumping out or keeping up the mine, but nothing serious has happened.

All the coal in the southern Illinois field is cleaned up and both sides are marking time until the trouble is over. There is still some poverty at places but in the last few weeks the miners seem to be able to get more credit than formerly, which indicates that the merchant feels normality is near.

Much the same condition prevails in the Duquoin, Jackson County and Mt. Olive fields. Throughout the Standard district there are places where the miners are having a hard time making both ends meet.

### WESTERN KENTUCKY

As a result of the railroad strike stopping production in some other fields, demand on western Kentucky has been greater than ever, and this district, not being checked much by the rail strikes, is producing at a good clip, while prices are climbing. Orders have been coming from all parts of the North and West, with some tonnage moving East as well. Today it is a question of getting any kind of coal at any price with many consumers.

Operators of western Kentucky are quoting prices over a dollar a ton higher than quotations of last week, and there is reason to believe that next week's prices will be still higher. A week ago Western Kentucky was quoted \$4.25@4.50, while this week the cheapest coal quoted was \$5@5.10 with the market ranging as high as \$6.25. It is reported that car service on the I. C. lines has been good.

## Eastern Inland

### Acute Market Conditions Intensified as Stocks Shrink

**Rail Strike and Congestion Further Entangle Situation—Prices Boom, \$5 for Non-Union Coal Likely Soon—Lake Situation Is Critical.**

**M**ARKET conditions are more acute. Coal stocks are either dangerously low or entirely depleted and fresh supplies are extremely difficult to obtain. Rail congestion and strike troubles are delaying coal deliveries. Prices are booming and non-union coals will soon go over the \$5 mark unless the strike can be settled and much needed production released. The market belongs entirely to the bidders and the urgency for fuel is daily growing more pronounced. The Lake situation is critical, and priorities are likely later on this summer as the only solution to safeguard the Northwest's winter supply.

#### PITTSBURGH

There is no operation at any of the union mines in the Pittsburgh district. Late in June plans were completed for an attempt at resumption at several mines, but President Harding's inception of efforts to end the strike caused the operators to postpone their efforts, while it stiffened the attitude of the miners. The Washington proposal also had the effect of strengthening the non-union striking in the Connellsville region.

The President's proposal of terms for a resumption of mining has been roundly criticized. The non-union operators have also joined in, for the language of the proposal is not clear, leaving it as a possibility that the non-union operators who have strikes on their hands are expected to participate in the union settlement. As the United States Steel Corporation is notoriously on an open-shop basis an important issue is involved.

Trading has been lighter in the past week, offerings being diminished. Prices are higher. Westmoreland gas has been going at \$4.75 and Connellsville steam coal at \$4.25@4.50. Demand, in general, is greater on account of reduced deliveries of West Virginia and Kentucky coal arising out of railroad congestion, which has been accentuated by the strikes of railroad shopmen.

#### BUFFALO

As a rule consumers have lost out by failing to buy a little more generally, but they cannot be made to understand and are only buying a little, to enable them to wait until coal is in full supply again. A jobber reports making sales lately at \$4.35 for 3-in.

lump to a consumer who in April refused to pay him \$1.90. The popular idea is that President Harding's reported plan, to have the men go back to work will be rejected by the operators. The idea is that it would be preposterous to go back to war wages, paying the men \$7.50 for eight hours' work.

Quotations are hard to make, as there is really no regular price. Sales as high as \$4.25 @ \$4.50 for 3-in. and \$4 @ \$4.25 for mine run and slack have been made.

Only three cargoes of bituminous coal have come in from Ohio in the past seven days, total 17,500 net tons. The Buffalo furnaces have bought 200,000 tons more of this coal.

#### CLEVELAND

Conditions are becoming more acute. Railroads, brick plants and industrial users of all descriptions are flooding the market with inquiries. The main bulwark of the industrial situation is the Cleveland Electric Illuminating Co. This company supplies about 75 per cent of the factories in this community with power. It still has sufficient coal reserve to last until Aug. 15. Plants not buying power, however, are suffering. As a result prices are advancing, with every indication of higher prices if the strike settlement is not made soon.

A survey made of coal supplies in public utility plants in Ohio shows that the electric railroad companies have sufficient stocks to last to the middle of August. Artificial gas plants are virtually barren of stocks, while electric power plants have sufficient stocks to run until the last of July. The Cleveland municipal water works is inquiring for coal. The school board of Cleveland has asked for bids for 21,000 tons of slack and smaller amounts of other grades. Specifications are so exacting for this business, however, that operators are going slow in offering bids in view of the uncertainties of the situation.

The Lake situation is getting daily more critical. Shipments are not increasing and priorities loom as the only method of solving the problem later in the summer. Another phase of the matter which is worrying operators in this district is the possibility that Illinois and Indiana rail coal will be drawn upon largely to meet the needs of the Northwest. This will contribute to the car shortage.

#### COLUMBUS

With the strike continuing unabated and the railroad situation getting worse, there are many indications of an acute demand for fuel. Hoover prices are being disregarded more and more and operators and jobbers to a certain proportion are asking as high as \$4 @ \$4.25 for lump and mine run. But in the main a large number of the producers are asking the Hoover levels only and with the jobbers' commission this is slightly higher to the trade. Retailers have cleaned up pretty well

on stocks and as a consequence are coming into the market more and more. This, together with steam and railroad demand, is making a bidder's market entirely. Pocahontas lump is retailing around \$7.75@8, while West Virginia splints are quoted \$7.25@7.75. Only a limited amount of Ohio-mined coal is available at present.

During the week ended July 12 the H. V. Docks at Toledo loaded but 96,688 tons as compared with 170,160 tons the previous week. The total tonnage handled by these docks since the opening of navigation is 1,398,338. The T. & O. C. Docks at Toledo have not opened for Lake loading.

#### EASTERN OHIO

Reports reveal an impending fuel scarcity, especially among the larger consumers. The ultra conservative stocks laid by prior to April 1, notwithstanding additions made to them by purchases of non-union coal, are nearing the point of absolute depletion. For example, it is asserted that Lake shipping may shortly be curtailed because of the scant supply of coal for fuel purposes at the various docks. Within the past few days, the Detroit & Cleveland Navigation Co. is said to have wired Mr. Hoover with a view to obtaining relief.

The quantity of coal available in the spot market has precipitously declined during the past 10 days and buyers who have been slow in safeguarding their fuel requirements now find themselves in a position of considerable apprehension.

Another deterrent factor is the curtailed operation of eastern Ohio stripping mines because of labor difficulties. It is estimated that the aggregate output of these mines at this time is between 30,000 and 35,000 tons per week, as compared with 50,000 tons 30 days ago. Spot prices during the week rose above the Hoover level.

Receipts of bituminous coal at Cleveland during the week ended July 8 were the smallest in 10 weeks. Total quantity arriving was 838 cars; 721 cars for industries and 117 cars for retail yards, as compared with a total of 1,145 cars the preceding week.

#### DETROIT

Buying is proceeding very slowly. Jobbers are inclined to regard as fortunate the fact that a greater disparity between supply and demand does not exist, in view of the circumstance that the quantity of coal available for the Detroit market has been greatly reduced within the last few weeks.

Many of the factories and industrial plants are reported to have a fair supply of coal remaining in reserve piles. Quotations on all descriptions are holding at about the level fixed by Secretary Hoover, with lump and egg at \$3.75, run of mine \$3.50, nut and slack \$3.25.

#### NORTHERN PANHANDLE

Production continues on a large scale. There are only about three plants in this region now inactive. Not only is there a strong demand for railroad fuel but the buying of commercial coal is on a large scale. The rail strike greatly stimulated the demand. Prices are firm with mine run bringing the maximum.



## Northwest

### Minnesota in Travail

#### May Seize Trusty Axe

**"Cut Timber" Is One Emergency Scheme That Fuel Surveyors May Propose—Whole Region Fears Future—Prices Climb—Receipts Pitiful.**

REPORTS indicate this week that part of the Northwest is getting more and more flighty over the coal crisis but that around Milwaukee there is still some confidence that the situation nationally will straighten itself out and that enough fuel will reach the region to hold down prices and prevent anything like a famine. Receipts by vessel at upper docks continue pitifully small and in Minnesota they are taking an official state canvass of the coal status which may result in a recommendation that the state turn to the forests for much of its fuel.

Prices are steadily advancing in most parts of the Northwest though so little coal is on hand that few except old customers are getting any, and delivery to even those is carefully restricted.

#### DULUTH

The coal situation at the Head of the Lakes is indeed serious. Free stocks on docks are at the low ebb. Orders are being refused by local dock companies and coal is allotted to old customers.

An official statement of the soft coal on docks shows that railroads own 600,000 tons and industries 409,000 tons and that free coal totals 478,000 tons.

Shipments from the local docks for the month of June aggregated 26,634 cars. In June of last year but 9,557 cars were shipped and during May this year only 18,587 cars went out. The shipments last month were the heaviest in eighteen months, with the exception of last October, when 28,722 cars were shipped.

Receipts have been pitifully small. In June there arrived 155,034 tons of bituminous. The season's total is 4,562 tons of anthracite and 284,174 of bituminous. This is 445,516 tons of anthracite and 3,510,971 tons of bituminous less than last year. An anthracite shortage this winter seems impossible to avert.

Prices have advanced. Lump is quoted at \$7.50 by the majority of docks, run of pile at 50c. less and screenings as high as \$6.50, with the level around \$6.

#### MILWAUKEE

The coal business is at a standstill. Wholesalers and retailers are filling their spikes with orders which they cannot fill until coal begins to be mined again and the railroads resume running.

Milwaukee is receiving coal by Lake almost daily, but the coal goes out about as fast as it comes in. Dealers are optimistic, however, and are inclined to cry down all talk of a coal famine and high-priced coal the coming winter. President R. H. Aishton of the American Railway Association wired the Milwaukee Association of Commerce that if the coal strike is settled by Aug. 1, the railroads will have sufficient cars to carry the necessary coal tonnage from the mines to Lake Erie to make up the deficit on the docks in the Northwest.

There has been no disturbance of prices since the recent advance of 50c. in soft coal.

Thus far in July, 14 cargoes of soft coal aggregating 88,570 tons have been received, making the season's receipts to date 694,831 tons, against 1,375,653 tons last year up to this time, a shortage of 700,822 tons from last year's record. No hard coal has been received as yet, the 700 tons of anthracite screenings being of little account as fuel. Last year 435,200 tons of hard coal had been received up to now.

## MINNEAPOLIS

General public apprehension over a coming coal famine grows throughout this region. The governor of Minnesota has started a fuel survey which may result in a recommendation that wood be cut as a coal substitute and distributed all over the state. This, naturally, would be an extreme measure for in few cases could wood take the place of steam coal; but it indicates the straits in which the state feels itself to be in with the Lake season so far advanced.

Many eyes are turned toward the lignite fields of North Dakota. It has been suggested that those fields could deliver to Minnesota 200,000 tons—a mere drop in the coal bucket. However, Dakota has its own fuel troubles and this source of supply is considered decidedly unstable. One expert has estimated that 6,000,000 tons of soft coal are needed here this winter. This region, always dependent upon outside sources for its fuel, probably will have to depend upon the national settlement of the coal strike, for its salvation.

The lower freight rates effective July 1 have given 20c. reduction in the cost of hard coal at the Twin Cities, this being the reduction on the haul from the docks to these cities. But that is on the basis of the old cost of coal. What the cost of new coal will be, when it comes, is very uncertain.

## New England

### Buying Interest Shown, Spot Prices Tend to Stiffen

**Business Improving, Trade Is Less Insistent That Consumers Take Delivery—Rail Strike May Mean Trouble, but Local Traffic Has Not Been Upset—Cars Disabled and Delay in Repairs Reported.**

BUYERS have shown more concern over purchases the past week than at any time for several months, and to a degree spot prices have stiffened. Rehandlers at this end have had reasonably good business the past week and in the trade there is less disposition to press deliveries on the consumer than was the case a fortnight or so ago. It is realized that the striking shopmen can cause trouble somewhere along the route, although in New England the men who walked out were replaced to a considerable extent without much difficulty. Traffic here has been unaffected, but reports are coming through of disabled cars in transit from the mines and of indefinite delays in repairing them.

At Norfolk and Newport News there has been a notable change in the situation, especially at the Norfolk & Western terminal. On July 15 it was stated that only about 26,000 tons of Navy standard coal was available for cutting, and that this tonnage be-

longed to twenty-three different agencies. On top of holiday suspension the shop troubles have further cut down output that had been kept for a considerable period on a 110 per cent basis.

Prices for spot delivery have already responded to the reduction in tonnage available and as high as \$6.72 has been rumored as a sales figure, f.o.b. vessel at Hampton Roads. Until railroad congestion is relieved it is likely there will be advances all along the line and the slowing down of deliveries to the West may be the means of bringing the Government more actively into the controversy. Opinion here is very pronounced over the way railroad and coal troubles have been allowed to drift. The contrast with the Government's attitude in 1894 is everywhere the subject of bitter comment.

Water receipts thus far have been maintained on the June average. By far the greater proportion have been on contract, few factors having cared to take the chance of shrinkage in values at this end that were occasional a month ago. All-rail shipments have dropped off somewhat, the largest part being pretty well confined to contracts for railway fuel. More British coal has been entered at Boston for locomotive supply, but it is not yet known whether there are to be continuing shipments of the same kind.

Coastwise freights show no material change.

The relatively few mines that are in operation in Central Pennsylvania are struggling to keep up their daily average. It is up-hill work in most instances, and takes a sturdier kind of resolution than is in evidence elsewhere in these troubled times.

## Cincinnati Gateway

### Buyers Hot After Tonnage, Prices Take Sharp Ascent

**Premium Process Used to "Get Around" Hoover Price Schedule—\$5 Coal Appears — Strike of Rail Workers Serves as an Excuse — Tonnage Movement Slumps Heavily.**

THE strenuous days that coal men associate with the war and the months that followed were vividly brought back in Cincinnati and the non-union fields adjacent thereto during the past ten days. The handy deviation from the Hoover prices by applying the "premium" process having led to the exaction of larger profits, smaller operators and a class of jobbers and wholesalers are now out in the open and \$5 coal has been chalked up.

The strike of the shopmen and other employees of the railroads has played a part, in that it has offered an excuse for pyramiding the price. The buyers, principally steel men, have been hot after any or all tonnage that was available and since the beginning of the week prices have shot upward. The tonnage hauled through this gateway has dropped fully 50 per cent recently, and from a transportation standpoint the situation is the worst in years.

#### CINCINNATI

The vast majority of the direct sales offices, old line wholesalers and others are still sticking to the Hoover price and are going without spot business rather than engage in evasions. The result is that there are two separate and distinct price lists on the market, one for the coal that is in transit and close enough for connecting line delivery, and the other for coal that must take its turn in order to start moving.

All three lines engaged in heavy coal traffic, the L. & N., the N. & W., and the C. & O., have been failing in their ability to cope with the transportation problem. The tonnage passing over the bridges here has dropped fully 50 per cent from the peak that was established three weeks ago. The strike of the N. & W. clerks at Portsmouth has called a number of clerical coal men from the Pocahontas field in order to keep some of that tonnage moving to the West and the Lakes. The situation admittedly has resolved itself into the worst state of affairs that has been faced from a transportation standpoint for years and there are those who profess to believe that \$5 coal isn't a marker to what it may be a few days farther along.

Cincinnati is holding to her faith in the river transportation for her own immediate needs. Even with the upturn to the wholesale market the re-

tailers have shown no disposition to take advantage of the flurry except that where \$8.50 was quoted as high for Pocahontas lump, \$7 for mine run and the bituminous lump, and \$5.50@ \$6 for screenings last week, these are now the minimum prices. In other words, where a few retailers were undercutting the prices a week ago, they are now all to that level. Mine prices are steadily rising and are shown in the Weekly Review. The market is extremely sensitive.

#### HIGH-VOLATILE FIELDS

##### KANAWHA

July 4 tended to curtail production. Furthermore, congestion in yards and on sidings has tended to restrict the car supply to some extent, but as the need for cars in this region is not as urgent as in some other fields where more coal is being produced, the supply has not affected the output to an appreciable extent. There was a brisk demand for steam coals in Western markets and Lake demand was reaching larger proportion.

##### LOGAN AND THACKER

Logan production was affected by inability to secure empty cars, production falling behind at the rate of 300 cars a day at times. Consumers have been buying on a larger scale and have been urging prompt shipment for fear the rail strike may affect delivery. There is also a growing demand at the Lakes. Shipments to the steel centers are large.

The heavy movement of Kenova-Thacker coal is preventing capacity production, owing to the difficulty of getting empties back to the mines. However, labor shortage losses are still running higher than those from car shortage. There is a ready market for all the steam coal produced. A large tonnage is being sent to the Lakes.

##### NORTHEASTERN KENTUCKY

Since July 1 the demand has been augmented not only by lower freight rates but also by the fear among consumers of having shipments curtailed at any time by the rail strike. Prices on all grades are at the maximum. The greatest obstacle in the way of capacity production is the difficulty in getting more equipment to the mines, congestion delaying the delivery of empties.

#### LOW-VOLATILE FIELDS

##### NEW RIVER AND THE GULF

There would have been additional gains in the New River output in the first week of July but for the intervention of the holiday. A congestion of traffic has followed in the wake of an unusually large production. With rates reduced, Tidewater is taking a little more coal but much of it is going to New York, Baltimore and Philadelphia instead of New England. Mines continue to increase their output as more men return to work.

Gulf mines are being handicapped by a serious congestion on the Virginian, there being more than 5,000 cars

awaiting unloading at various points owing to the failure of the public to purchase. Car shortage losses are now twice as large as labor shortage losses, which for a time were the principal factors in holding back production. Much of the product is consigned to Tidewater.

##### POCAHONTAS AND TUG RIVER

There is an ample market for the large output of the Pocahontas region, which continues in excess of 400,000 tons a week, despite certain handicaps, such as a labor shortage and the difficulty of securing equipment, due not so much to any shortage of cars but to the impossibility of moving loads and empties with more celerity. Yards and trackage facilities are taxed to the utmost. When Tidewater became congested, there was a heavier movement westward for which there is now a better market than there was before July 1. Prices have stiffened again.

Tug River mines are still producing in excess of 110,000 tons a week, not having been bothered much by a shortage of mine labor, although now beginning to feel the effect of a shortage of equipment. The principal movement from this field is to Western points.

## West

#### SALT LAKE CITY

Business is still quiet. Probably nothing short of filling up the bins free would arouse the public to the necessity of getting in winter coal now. There is likely to be a rather serious car shortage this year and anxiety is felt in operating and retail circles. Salt Lake City has today about 30,000 tons of coal in its yards.

Figures showing the coal produced in the state for the first six months of the present year show a gain over the same period of 1921 amounting to 370,795 tons, the total tonnage being 2,100,251. Production, however, is well below that of the first half of 1920.

#### KANSAS CITY

The coal situation is more unsettled than ever due to the railroad shopmen's strike, which has curtailed transportation to some extent and caused a spirited demand for such coal as is available. Prices have gone up as a result. Kansas mine run is selling as high as \$5 per ton for the better grades and production appears to be on the increase with no labor trouble.

Local dealers are advising their customers to put in coal now and as the prices are higher than last year, it is hard for the users of coal to understand, but no doubt it will be made plain to them if last year's wage scale for the miners is continued, as the prices will be based on the wage scale and as nearly all the dealers lost money last year, they will have to get more for the coal they handle or continue to lose money.

There is a little coal being mined now in Arkansas and while as a rule there is little demand for this grade at this season, it is moving freely; in fact the storage coal is about all used up and anything that will make steam is in demand.



## News Items From Field and Trade

### ALABAMA

State convicts will be used in mining coal at Aldrich for another three months under a contract between the state and David Roberts, trustee of the **Montevallo Mining Co.** Announcement has been made at the executive department that the contract had been agreed upon and had been approved by Governor Kilby. An experimental contract for one month was made recently at the price paid by the Montevallo company for convict labor before the company passed into the hands of the bankrupt court.

Among the recent incorporations was the **Lens Coal Co.**, with offices at Henry Ellen, capitalized at \$25,000, with \$12,700 paid in. Incorporators were A. C. Payne, W. L. Simmons and John R. Boyle.

### COLORADO

The Leyden mine, near Denver, is operating normally, according to officers of the **Leyden Coal Co.** This mine has been operating on the open-shop basis for 20 years. Miners on the payroll now in most instances have been with the company a good many years and do not appear to pay attention to strikes in other fields.

The **Colorado Fuel & Iron Co.** has been able to increase its output half a ton per man per day this summer as a result of a campaign to stimulate men to do their best. The campaign methods include schemes of pairing up mines and districts and pitting them against each other with daily reports "from the front" which are posted where men can see them frequently.

### ILLINOIS

The **Groveland Mining Co.** has sold an issue of \$300,000 first mortgage 7½ serial gold bonds to John Burnham & Co., Chicago. The company operates a mine at Hilliards, seven miles southeast of Peoria, in Tazewell County, and is on the line of the Peoria & Pekin Union Ry., which is a belt line connecting eleven railroads serving Peoria.

**Horace Clark**, of the **Clark Coal & Coke Co.**, of Peoria, was in Chicago recently.

**D. W. Buchanan**, of Chicago, president of Old Ben Coal Corporation, spent several days, including the Fourth of July, at Oconomowoc, Wis.

**George B. Harrington**, of Chicago, president of the Chicago, Wilmington & Franklin Coal Co., has returned from an Eastern business trip.

The **Dixie Fuel Co.**, of Louisville and Nashville, has arranged to open a branch sales office at Chicago, which will be in charge of John H. Rhodes. A. C. Lackey, producer and also president of the Dixie Fuel Co., and H. H. McBratney, vice-president of the Dixie Fuel Co., were in Chicago recently, arranging for the opening of the office there.

The **Orchard Coal Co.**, of Marion, of which Charles Gent of that city is general manager, recently acquired the mine and property of the **Harrisburg Fuel Co.**, near Dorrisville, Saline County. The Harrisburg Fuel Co. was composed of R. A. Parks and John W. Gray.

**James Forester**, general superintendent of the **Paradise Coal Co.**, of Paradise, is on a long vacation in the West.

### KENTUCKY

**J. B. Dills** is now superintendent of the **Miners' Elkhorn Coal Co.**, Riceville. He was formerly with the Collins Mining Co., of Lackey.

**M. D. Nidiffer**, formerly with the Melcroft Coal Co., is now mine superintendent of the **Harlan Fuel Co.**, Harlan.

The strike of shopmen on the lines serving the coal fields of Kentucky and Tennessee is threatening to tie up the entire mining industry, as a result of the severe

congestion at terminals where freight trains have been stopped with no prospect of continuing. There are many dead engines in the L. & W. yards at Corbin, the great junction point of the Kentucky, Cumberland Valley and Knoxville divisions, as the roundhouse men are out. Western Kentucky is not having quite so much trouble as the eastern section.

The mines of the **Producers Coal Co.** at Waverly, as well as the coal and equipment, have been sold at public auction. The company made an assignment June 25, 1921, and has not been operated since. The property consists of 1,700 acres of coal rights and a mine electrically operated.

### NEW YORK

**D. C. Ashmead**, anthracite editor of *Coal Age*, is broadcasting a talk on the anthracite situation from the following stations: July 17—7:45 p.m., Philadelphia, Pa.—John Wanamaker—WOO.

July 18—7:45 p.m., Springfield, Mass.—Westinghouse Elec. & Mfg. Co.—WEZ.

July 19—8:45 p.m., Medford Hillside, Mass.—American Radio Corp.—WGL.

July 20—8:00 p.m., Schenectady, N. Y.—General Electric Co.—WGW.

July 21—8:00 p.m., Pittsburgh, Pa.—Westinghouse Elec. & Mfg. Co.—KDKA.

July 23—8:00 p.m., Newark, N. J.—Westinghouse Elec. & Mfg. Co.—WJV.

July 24—9:00 p.m., Wilkes-barre, Pa.—WBAX.

After an association of twenty-two years **David W. Allen** has retired from William C. Atwater & Co., Inc., New York. He is succeeded as sales manager by George H. Lachnicht.

Announcement is made of the appointment of **Harrison G. Ecker**, as general manager of W. H. Bowater, Inc., 66 Broadway, New York.

The **Rome Wire Co.** announces that it has taken an interest in the Atlantic Insulated Wire & Cable Co., which will continue to manufacture high grade rubber covered wires and cables.

### OHIO

The Cincinnati branch of the American Wholesale Coal Association has appointed **Fred Legg**, president of the Logan and Kanawha Coal Co., **E. F. Bardin**, of the MacEard Coal Co., **W. T. Francis**, of the Tildesley Coal Co., **R. H. McCormack**, of the Kearns Coal Co., and **Elmer Weirhake**, of the Kentenia Coal Co., a committee to look into the establishment of a credit bureau for the jobbers in coal for that section.

**Major E. S. Helborn**, Senator **J. F. Bosworth**, and **J. D. Fitzpatrick**, owners and operators of several mines in Bell County, Ky., and large acreage there were in Cincinnati recently going over the details of a big merger that will take in several of the going operations in that section of southeastern Kentucky. The plans call for the consolidation of eight mines and the opening of others.

### PENNSYLVANIA

The **Anthracite Oil, Gas & Coal Co.**, Northumberland County, has notified the State Department at Harrisburg of an increase in its capital from \$5,000 to \$32,000. **Charles E. Jones** is the treasurer.

The State Department of Mines has just compiled figures showing the production of bituminous coal in 1921 in Pennsylvania. The total production of coal was 114,447,132 tons and of coke, 4,876,322 tons. Coal shipped to the market was 102,881,909 tons; coal used at the mines, 2,738,723 tons; coal sold to local trade and used by employees, 1,734,365 tons and coal used in the manufacture of coke, 7,092,135 tons.

The miners at Colver employed by the **Ebensburg Coal Co.** have been pretty thoroughly organized and the new union men have struck. Eviction notices are being

served on those living in company houses by the company. Evicted workers will be added to the tent colonies.

The tippie of the **Shade Coal Co.**, at Hagevo, was destroyed by fire recently, entailing a loss of \$10,000. The origin is thought to be incendiary.

Notice of dissolution of the **Basin Coal Co.** has been filed with the secretary of internal affairs, Harrisburg.

**Cosgrove & Co.**, with headquarters in Johnstown, and with sales offices in Chicago, St. Louis and Minneapolis, have been made sole distributors for the **New River Collieries**, a Guggenheim subsidiary. The plants producing this low-volatile coal are located at Eccles and Sun, in Raleigh and Fayette counties, and are in the heart of the New River smokeless coal district. The coal which the Cosgrove company will sell is what is known to the trade as "Admiralty," and has gained widespread popularity in the Eastern part of the country, and was used largely by the Navy during the war.

The territory over which the Cosgrove company will sell the coal is embraced in Ohio, Indiana, Illinois, Michigan, Wisconsin, North and South Dakota, Iowa, Nebraska, Kentucky, Missouri and Canada, west of Toronto.

**Samuel S. Lewis**, auditor general of Pennsylvania, has notified all coal companies which have failed to make returns or to pay the anthracite tax to the state, pending appeals of the constitutionality of the act of 1921, that they must file specifications of objections to the sum determined to be due and furnish bond in double the amount of the tax contested and make cost provisions for the collection. The tax is on production for the last half of 1921, and more than \$3,100,000 is due for that period.

### UTAH

It has been announced that the **Columbia Steel Co.**, headed by Wigginton E. Creed, of San Francisco, has acquired the coal and iron properties of the **Utah Coal & Coke Co.**, in Carbon and Iron counties. The **Columbia Steel Corporation**, capitalized at \$15,000,000, will be formed to work the joint properties of the new organization, which will take over the steel foundry and rolling mills of the former Columbia interests at Pittsburg, Cal., and the steel foundry at Portland, Ore., also a Columbia holding.

### WEST VIRGINIA

The **New River Company**, largest producer in the New River field, has announced that several of its mines have been able to resume owing to the fact that a good many of its miners have returned to work after having been on strike.

A resumption of operations at the No. 34 mine of the **Davis Coal & Coke Co.**, at Thomas, was possible a short time ago, when about 44 men reported for work. This had been closed down since April 1 as the result of the strike. Resumption of operations at the mine is regarded as a favorable development owing to the fact that the union has held frequent meetings at Thomas, the largest mining center in the Upper Potomac region.

The **United Mine Workers' organization** has been sued for \$1,000,000 by the **Willis Branch Coal Co.**, in the New River field, to cover damages inflicted by members of the U. M. W. during the period which this mine was under constant attack between Sept. 1, 1919, when it started to operate on an open-shop basis, and May, 1921. In order to make certain that it secures damages in case it should win the suit, the coal company has indicated that one of the first steps taken by it will be to attach district headquarters of No. 17 at Charleston and the district headquarters of district 29, at Beckley, it being estimated that the aggregate value of these properties is \$150,000.

Approximately 3,000 acres of coal land in Brooke County have been secured by **J. C. McKinley and associates**, of Wheeling, this coal property being near Cliftonville. The land was secured from the Sawtell-Ferguson interests, the consideration not being made public.

The tipples and approaches of the **A. L. Black Coal Co.**, near Madsville in Monongalia County, were totally destroyed by fire of incendiary origin a short time ago, the loss entailed ranging from \$10,000 to \$15,000. The mine had been leased to **Richard Poland** who had a force of men cleaning up the "dead work," but who as-

serts that he had no intention of operating his mine at this time. He believes that a union sympathizer thought he was preparing to resume operations and set fire to the tipples.

**William Gantz**, state mining inspector for the 4th district of West Virginia, has been transferred to the 16th district and will have his headquarters at Mullens, in the Wyoming County field.

**Benjamin Bissell**, general manager of the Century Coal Co., with headquarters at Baltimore, was a visitor at Fairmont during the latter part of June, making the trip to attend a meeting of the Northern West Virginia Coal Operators' Association.

**John F. Phillips**, head of the Delmar Coal Co., with headquarters at Fairmont, spent the latter part of June on a fishing trip, going to the Trough Club in Hampshire County.

Comparatively few coal concerns discontinued their corporate existence during May, the following being in the list of companies dissolved. **The Pollock Coal Co.**, **Nolin Asphalt Coal & Navigation Co.**; **Fred Coal Co.**; **Penn American Coal Co.**; **Electric Mining Co., Inc.**

Only eight new coal companies were launched as resident corporations in West Virginia during May, there being two non-resident coal corporations formed in the state. The aggregate capitalization of the resident coal corporations organized was \$605,000, the capitalization of non-resident corporations amounting to \$35,000. In the list of new concerns organized were the **Behler Coal Co.**, of Fairmont, with a capital stock of \$50,000; **Washington-Elkins Coal Co., Inc.**, capital stock of \$300,000; **Jaeger Fuel Co.**, Jaeger, \$25,000; **Wacomah Coal Co.**, Amigo, \$150,000; **Cherokee Coal Co.**, Charleston, \$10,000; **Will-Earl Coal Co.**, Clarksburg, \$10,000; **Poland Co-Operative Coal Co.**, Morgantown, \$10,000; **Spencer Fork Coal Co.**, Beckley, \$50,000. Non-resident coal corporations organized were the **Quality Coal Co.**, Charleston, with chief works in Ohio, \$10,000; **Triangle Coal Co.**, Bluefield, with chief works in Kentucky, \$25,000.

The following companies have increased their capital stock: **McKeefrey Coal Co.**, of West Virginia, from \$300,000 to \$500,000; **Elkhorn Gas Coal Co.**, from \$100,000 to \$250,000; **Carry on Coal Co.**, from \$75,000

to \$200,000. The following concerns have reduced their capital stock: **Kimball-Peachontas Coal Co.**, from \$100,000 to \$50,000; **MacGregor Coal Co.**, from \$300,000 to \$5,000; **Sugar Creek Coal Co.**, from \$125,000 to \$100,000.

Winding Gulf mines have been able to secure a new through rate from the Gulf region to Baltimore, being set \$3.65 per ton. This is expected to afford a better market for Gulf coal at the Baltimore port. As yet, however, but little movement has been noted.

Striking miners are continuing their efforts to stop production at the mines of the **Hudson Coal Co.**, in Harrison County, by resorting to sniping. Guards at the Lewis mine of the company at Reynolds-ville were fired upon by strikers who occupied points of advantage on neighboring hillsides. When the strikers opened fire guards returned it and between twenty and thirty shots were exchanged. No one was injured.

## WASHINGTON, D. C.

The Bureau of Internal Revenue is making an effort at this time to secure mining engineers who are qualified to make valuations of all types of mining properties, including oil and gas operations. Applications for that examination will be received until Sept. 1.

The **Canute Steamship Co.**, of Great Britain, has requested the United States Supreme Court to review the decision of the Circuit Court of Appeals, Second Circuit, in its case against the **West Virginia Coal Co.**, involving breach of charter parties and the bankruptcy law. Involved in the case are several other coal companies, including the **H. M. Crawford Coal Co.**, the **Boulder Coal Co.**, the **Morgantown Coal Co.**, and the **Diamond Fuel Co.** A total of \$162,677 is involved. In this case coal to the credit of the coal companies held by the Tidewater Coal Exchange at Baltimore was attached and sold. \$110,000 proceeds of which are held by trustees. In 1921 the **Pittsburgh & West Virginia Coal Co.**, the **Crawford Coal Co.**, and the **Boulder Coal Co.** filed a bankruptcy petition. The District Court entered an order of adjudication but did not state whether or not the **Pittsburgh & West Virginia Coal Co.** was a

creditor of the **Diamond Fuel Co.** The Circuit Court affirmed this decision, review of which is sought by the petition to the Supreme Court.

The naval appropriation bill carrying funds for the Navy for the year beginning July 1, allows \$16,000,000 for fuel for the Navy this year and \$700,000 for fuel for the Marine Corps. An appropriation is also made for prizes for economy in fuel consumption.

The improvement of the harbor at Beverly, Mass., at an expense to the government of \$98,000 in addition to funds already authorized, is conditioned by the river and harbor bill reported by the Senate Committee, on the contribution of \$25,000 by coal and oil or other local interests which will benefit by the improvement. Another improvement is to Green Bay Harbor in Wisconsin at a cost of \$110,000. On this harbor 80 per cent of the commerce is in coal, handled by vessels of 19 to 20 ft. draft, which is 1 or 2 ft. greater than the depth of the channel. A \$4,000,000 improvement at Milwaukee Harbor is proposed, which will include facilities for handling coal and ore in a scheme of terminal development on the Great Lakes for handling bulk freight, providing for its later expansion under modern and economical practice.

**C. D. Avery** has returned to Washington from Wyoming, where he has been making oil investigations.

The War Department appropriation bill, as agreed to by the Congressional conference committee, limits the Army fuel allotment for the year beginning July 1 to \$3,500,000.

## QUEBEC

As a result of the American coal strike fuel is now being brought to Montreal from the Cape Breton mines by six vessels, directly owned and operated by subsidiary companies of the **British Empire Steel Corporation** at the rate of 21 cargoes per month. Other shipments are also coming in by chartered steamers. It is expected that at this rate 1,500,000 tons will have been shipped to Montreal before the close of navigation. The best season's record of the Dominion and Nova Scotia coal companies St. Lawrence shipment was approximately 2,000,000 tons.

## Traffic News

The **Anaconda Copper Mining Co.**, in a brief filed with the I. C. C. in the Western coal rate case asks the commission to hold that the rates on coal between producing points in Montana, Wyoming, Colorado and New Mexico and states west thereof, and destinations in the same states and El Paso, Tex., to be unreasonable and to order rates on mine run, nut and slack coal which shall be less than those on lump coal. In this case the Kemmerer Rock Springs operators ask that the commission hold that the differential adjustment of rates to the territory north and west of McCammon is prejudicial to the Kemmerer district and preferential of the Castle Gate district because the differentials in favor of the former are less than an average differential of 85c. per ton.

In the complaint of the **American Fuel Co.**, of Utah, the company asks the commission to prescribe rates on coal from Sego, Utah, to points in California, Nevada and Utah, west of Castle Gate, which are 12½c. per ton less than the rates from Thompson, Utah, and also rates from Sego to Cisco, Green River and Floy, Utah, and Fruita, Grand Junction, Mack and Durham, Col., that are no higher than the rate from Thompson. The railroads in this case ask that the proceeding be dismissed as the fuel company is seeking to extend to Sego the Castle Gate rate.

The **Nokomis Coal Co.**, of Chicago, has complained to the I. C. C. against the rates on mine timbers from Missouri to Illinois coal mines.

The case involving rates on coal from the Southwest to Omaha and related points has been assigned for argument by the I. C. C., at Washington, Sept. 14.

In the complaint of the **Meyersdale Smokeless Coal Co.**, the commission on re-argument and further consideration, affirms its original finding to the effect that the refusal of the B. & O., during the period from May 1 to Dec. 28, 1917, and under Federal control from that date to August, 1918, to furnish the company with cars for

transportation of bituminous coal, while furnishing other mine owners similarly located with cars, subjected the coal company to undue prejudice and disadvantage.

In the complaint of the **United Paper-board Co.**, an examiner of the I. C. C. recommends that the rates on birdseye coal from group A, B and C mines in Pennsylvania to Thomson, N. Y., be declared reasonable.

The **Illinois Coal Traffic Bureau** has filed a brief before the I. C. C. in the case brought by the **Northern States Power Co.** It requests that if the commission makes any change in the rates on coal screenings from mines in Illinois to Sioux Falls, S. D., that it apply such new rates in accordance with the differentials fixed in the Illinois coal cases. It is also suggested that the differentials should apply on fine coal as well as on large coal.

In the complaint of the **Grasselli Chemical Co.**, the I. C. C. has recommended that the question of the reasonableness of the charge for the use of the motive power and cars of the railroads in the carriage of coal and coke from the plant stock pile, intra-plant over the plant tracks, to various points of use, is not within the jurisdiction of the commission.

## Obituary

**Joseph Hallier**, a well-known mining man in the Birmingham district, died at Baltimore recently, where he had gone for treatment of a throat cancer. He was a prominent figure in United Mine Worker circles for years, and at one time was national organizer. He was connected with Alabama Coal Operators' Association for several years and at the time of his death was manager of the employment department of the Woodward Iron Co.

**J. L. Middleton**, sixty-six, one of the best known coal operators of southern Illinois, died recently at his home in Sandoval, Ill. He had been connected with southern Illinois coal fields since 1882.

## Coming Meetings

**American Chemical Society's** annual fall meeting will be held Sept. 4-9 at Pittsburgh, Pa.; divisional meetings will be held at Carnegie Institute of Technology and general meetings at Carnegie Music Hall.

**American Mining Congress.** Twenty-fifth annual convention and exposition of mines and mine equipment will be held at Public Hall, Cleveland, Ohio, Oct. 9-14. Executive offices, the Hollenden Hotel; E. C. Porter, convention manager.

**The Rocky Mountain Coal Mining Institute** will hold its next meeting at Glenwood Springs, Col., Sept. 6-8. Secretary, F. W. Whiteside, Denver, Col.

**New York State Coal Merchants' Association** will hold its annual meeting at Richfield Springs, N. Y., Sept. 7-9. Executive secretary, G. W. F. Woodside, Arkay Bldg., Albany, N. Y.

**National Safety Council.** Eleventh annual Safety Congress at Detroit, Mich., Aug. 28 to Sept. 1. Executive secretary, W. H. Cameron, North Michigan Ave., Chicago, Ill.

**Coal and Industrial Exposition** under the auspices of the Huntington Chamber of Commerce will be held Sept. 18-23 in the Chamber of Commerce Bldg., Huntington, W. Va. The **West Virginia-Kentucky Association of Mine, Mechanical and Electrical Engineers** will again hold its annual meeting in the same building during the exposition.

**National Exposition of Chemical Industries** will hold its eighth national exposition at the Grand Central Palace, New York City, Sept. 11-16. Manager, Charles F. Roth, Grand Central Palace, New York City.

**American Institute of Mining and Metallurgical Engineers** will hold its fall meeting during the week of Sept. 25 at San Francisco, Cal. It is proposed to arrange for a party to leave New York on Sept. 10, stopping at different cities en route. Secretary, F. F. Sharpless, Engineering Societies Building, New York City.